The Present State of Horticulture in America.

"The most highly esteemed favour which the early missionaries at Tahiti could confer on the king and queen was to furnish them each, on state occasions, with a specimen of that splendid novelty, the Sun-flower, to be worn in their dusky bosoms."—*Quarterly Review.*

WE lately returned from an excursion through one of the finest valleys the sun ever shone upon. Wheat, oats, corn, and potatoes, are cultivated in the neatest and most successful manner; up to the very fences the products for man and beast are grown without a weed. Limestone in abundance gives annual verdure to this large and lovely valley. Every farm has a good house upon it, and this is generally exceeded in size by the barn, at this moment bursting with fatness. As the eye glanced over the fields of mixed orange and green, the harvester in motion, and the tractable animals obeying the behests of the owners, we could but ask, "What wants this scene of loveliness?"

We were domiciled at a watering-place overlooking the broad acres, and saw the well-grown grain collected from a thousand fields. Our table was bountiful in meats and bread, and unexceptionably attended; but the fruits upon it were precisely those in favor before the Revolutionary War. The raspberries and strawberries were wild ones; the cherries, honey and black-heart. Why should this be?

Let us ride through this lovely scene. You may do so for an entire day with farms after farms succeeding each other, but you see no ornamental planting, no garden, no lawn. We did not find on such excursions an evergreen tree nor an asparagus bed! Two yuccas in bloom, at long intervals, were the sole flowers, except a few of the older kinds of hollyhocks, which seem to have flourished in spite of want of culture. The potato field or the grain crop, amidst a few utterly neglected old apple-trees, comes within a few feet of the mansion, whose best rooms are *almost* always shut up and the family of hard workers residing in the kitchen. This is no fancy picture. It is a superior one to the vast majority presented throughout our great and prosperous country, where "door-yards" with pigs for tenants are the rule, too often, rather than the exception. In our happy looking valley, money is the great good; to raise the greatest crops gives the greatest distinction, and thus from father to son has it gone on; generation after generation come to look at the beautiful scene, to work hard upon it, to live without intellectual cultivation or amusement, and to die and be forgotten as their fathers died.

Can no tocsin be sounded in the deaf and dull ears of these practical farmers? Can we not awaken them to the beauty and utility of fine fruit, to the study of the superiority of one tree, plant, or flower, over another? Shall all future descendants of these rich people go to their last rest without one glimpse of nature's adornings? How shall we come at their darkened imaginations, and how show them the beauty of loveliness?

That we cannot reach them by any scheme yet devised by the Patent

Office, seems certain ; that no number of the *Horticulturist* is taken in the county we could safely assert. Must we leave the spot to be never again attracted to it? or shall we return, in imagination, some thirty or fifty years hence, and find a portion of the pig-rooted "door-yard" blossoming with the rose ?

The way to accomplish so desirable an end is not difficult to suggest. Let a benevolent mind take to this somewhat benighted region a nursery. Let him show the Triomphe de Gand, or Hovey's Strawberries ; let him *give* to the first housewife who will listen to him a few plants of fine raspberries, show some fine flowers, and gradually gather round him a lover or two of handsome trees, till soon he organizes a Horticultural Society, and by emulation sows the seed of future progress. Here is a fine field for benevolence, for usefulness, and for training immortal minds to something more ambitiously useful than the continuous pursuit of *grain* and potatoes engenders.

Every one at all conversant with the present condition of Horticulture will admit that its state and prospects were never brighter than now. That it has many things to contend against is, however, apparent. And first we would name the reluctance with which some of those able to communicate information to the public come forward with their pens. The present editor of this journal is an amateur ; his position was rather forced upon him than selected by himself, and that occupation, necessary to his position, is still one which he would prefer should be filled by an abler hand. He has, however, an independent position ; is no way connected with commercial gardening or nurseries, and he believes he is the first conductor of a periodical devoted entirely to these subjects who has not been more or less influenced by commercial views. He requires assistance from the ablest pens, and though he has much from such sources, there are still experienced amateurs as well as gardeners and nurserymen who should devote a little of their leisure to instructing others as a means of reaching the uninitiated.

It is really surprising what a single individual may perform in the way of getting up a love of the best fruits, flowers, and trees. We could name small communities in the country where to be entirely ignorant of these subjects is to be unfit for society, but in the majority of neighborhoods, the reverse is the rule. In the infancy of the study or pursuit, Societies with competitive exhibitions are necessary, and the longer they can be kept in healthy operation the better. After a certain period, however, they are less needed ; the seed once sown it must continue to grow.

As for the benighted regions we set out by describing, there seems but little to hope for them in the present generation ; but benevolent persons may do much by exciting emulation ; above all, let us have *something taught to the children* on these topics. What, for instance, would interest a school so thoroughly as a lecture once a year, with plenty of samples of strawberries—enough for all to partake of ; or suppose a teacher as a reward for diligence should produce a table spread with fruit of any kind, and give a short discourse on their culture ; if even a waiter of cultivated blackberries were introduced and distributed, with an explanation of the differences between them and the common wild ones, we may be sure the children would never forget it. In this way whole neighborhoods could be filled with young people desirous of trying their hands in better garden culture than their fathers practised ; Horticultural Societies which would

undertake an annual or semi-annual exhibition to school children, and give them *a taste* while they instructed them, would make one of the strongest moves in the right direction. It has been tried abroad and has succeeded.

Hazlitt, in one of his Essays, answers the question "Why is a great chess-player not a great man?" by the reply, "Because he leaves the world as he found it." Not so the Agriculturist and Horticulturist; they leave the world better than they found it, if they pursue their avocations with zeal and understanding, and bring a knowledge of its humanizing influences to their neighbors.

FRUIT TREES IN ORNAMENTAL PLANTATIONS AND ON LAWNS.

BY WILLIAM SAUNDERS, LANDSCAPE GARDENER,
GERMANTOWN, PA.

The observations of the Editor of the *Horticulturist* and of his correspondent in the August number, deserve the consideration of every resident of the country. It is there remarked that some persons consider fruit trees are inadmissible in pleasure grounds, and that the severe rules of Landscape Gardening will not allow any such compromise as a useful fruit-bearing tree on a lawn. I am not aware of any such rule, and it would be extremely difficult to define a set of rules that would be universally applicable in matters of taste; there must, however, be a point where the lawn terminates and the orchard begins, and that point will in most instances be determined by local circumstances, and need not interfere with any laws of landscape gardening or necessarily infringe upon good taste.

The scenic effects of trees, of whatever kinds, depend very greatly upon their grouping and arrangement. Nothing would present a more commonplace or monotonous appearance than an acre or two of ground planted with sugar maples, horse-chestnuts, or any of the finest ornamental trees, at regular distances of 30 or 40 feet apart. We are so accustomed to this arrangement with pear, apple, plum, cherry and other fruit trees, that our ideas of them are much more associated with the arrangement, than with individual beauty, either of form or foliage. Many of our most productive and valuable fruit trees possess great symmetry and regularity of growth, while all may be formed into effective groups if planted with that object in view. One of the most interesting features that I have seen was a group of pear trees on the lawn of Matthew Howland, Esq., New Bedford, Mass. These trees had been "heeled in" while the grounds were in course of improving, and having taken root and grown finely were allowed to remain. They were all planted within a few feet of each other, and the irregular growth of the branches in consequence of their proximity, bending with fruitfulness and health, the whole closely surrounded with the smooth green lawn, formed one of the most pleasing illustrations of the useful combined with the ornamental, that could be wished.

Utility as an element of beauty, has not received that attention which it claims. I am convinced that it influences, to a very great extent, those faculties of the mind which enable us to establish a mental standard of beauty, and that frequently without our recognizing at the moment, the

causes that influence our decision. I do not here use the term utility in the limited sense that would merely imply the gratification of those wants necessary to our existence, but in its wider application of enabling us to discover beauties through educated intellect, rather than through the mere organic sense of vision.

It is not to be understood that I would recommend the planting of fruit trees for ornament in preference to others, but only endeavor to show that they need not necessarily be excluded; and that a single specimen-tree on a lawn, appropriately situated, such as a Vicar of Winkfield, or a Glout-Morceau, or a Seckle pear tree would certainly be as beautiful an object, considered merely as a tree, as many of those so-called lawn trees. And even those that are not individually sufficiently meritorious for conspicuous positions, may be arranged into effective masses; any person may collect a variety of paints, but only an artist can with them "lay the landscape on the snowy sheet." He may, even out of apparently simple and rough materials produce a "thing of beauty." So the landscape gardener may form a pleasing and varied composition with objects that may not possess much individual beauty, but which judiciously combined, are capable of developing impressive and characteristic scenery.

Any tree or plant therefore, that can be appropriately introduced into the landscape need not be excluded; and if we can arrange fruit trees so as to develope pleasing outlines of composition there is no apparent reason why it may not be done. On the contrary, there are occasions where such an arrangement may be introduced with the greatest propriety, and instead of conflicting with good taste, harmonize perfectly with surrounding improvements. Suppose the case of a farmer who wished to surround his dwelling with 10 or 12 acres of lawn thus profitably planted. Shelter would first be secured by planting evergreens on the most exposed sides; immediately around the house and for some distance beyond, the planting may be of a purely ornamental character; receding from these, introduce isolated specimens of the finer-growing cherry trees, following with a well defined group of the same, connecting in its general curvature, with the planting nearer the dwelling. A bold projecting group of pear trees may in a similar manner be introduced, and joined to the cherry plantation by select specimens of each. Apple and other fruit trees may be similarly connected and located; the crab apples will form single specimen trees of much beauty. These groups must be carefully arranged so that a pleasing sky outline will be secured. Fortunately, both apple and pear trees are so diversified in their growth, that forms may be selected as varied in character as the Lombardy poplar and the weeping willow. As the lawn extends, the groups may become more detached, and more definite in general form, by planting masses of one kind of tree, with well defined and ample sized glades of unobstructed lawn between.

The great secret of producing effect principally consists in properly defining the outlines of groups by placing low growths in front, that the lower branches may meet the ground and present an upward sloping bank of foliage. Dwarf trees of the respective kinds of fruits may be used, although any tree may be kept dwarf by due attention to heading down, and if dwarf trees are used they should be of kinds that will present a healthy appearance, if not a luxuriant growth. Any attempt to dispose of the plants in these groups at regular distances, especially in the more prominent

masses, will completely destroy the desired effect; indeed the whole arrangement must proceed from a careful and intelligent study of the subject.

In the course of my practice I have frequently taken occasion to advise the propriety of planting fruit orchards so as to secure more variety of outline than they usually present, and to a certain extent carry into the orchard some of the more characteristic features of ornamental planting. There are many situations where a fine effect can be produced by planting the orchard so that it will appear as a further extension of the lawn, somewhat in the manner that I have here attempted to sketch.

It may be argued that very little fruit would be produced by this method of planting, the trees being placed so closely as to prevent thorough cultivation. This objection is not so formidable as might at first sight appear. The soil around the trees in all the larger groups can be cultivated the same as in any other well kept shrubbery plantation; and I am not convinced that the European method of planting apple and pear trees at 40 feet apart, is the best adapted to this climate. Closer planting, so as to procure a more thorough shading of the ground by foliage, and the shelter thus afforded from the drying winds of spring and summer, arresting to some extent the rapid evaporation of moisture from the soil, are considerations worthy of attention.

An ample variety of really ornamental, and at the same time useful fruit trees may be selected, and it would be no difficult matter to plant a lawn almost exclusively with such, and still produce a great variety of landscape effect. The American and Spanish chestnuts are lofty trees bearing useful fruits; so are the shell bark and peccan hickory nuts. The black walnut may also be introduced; the English walnut, of which there are dozens of fine old specimens in this vicinity yielding annually many bushels of fruit, is also available. The butternut forms a fine group; its foliage at a distance resembles the ailanthus. The persimmon, when in vigorous growth, has glossy foliage of great beauty, and like the butternut, is well adapted for planting in groups. The mulberry family, although in some respects rather objectionable, would form a distinct feature; the red fruiting forms a tree of considerable size and is rather distinct in foliage. The black European is also a desirable plant. The pawpaw is certainly one of our finest foliaged plants, forming a beautiful group in close planting. In rich soils it will grow into a beautiful small tree, with foliage equal to a magnolia, and fruit but little inferior to the banana. The wild cherry, and the English bird cherry are both ornamental trees, especially the first; and the mahaleb cherry is very desirable on account of its fragrant blossoms; in this respect it resembles the English hawthorn and is a capital substitute for that delicately fragrant plant so much planted for its beauty.

For shrubbery and undergrowth we have the chinquapin chestnut, which will even grow into a good sized tree under favorable conditions, but may easily be kept as a low spreading bush, for which it is admirably adapted. The species of berberry afford much variety, both in habit and foliage. The cornelian cherry (cornus mas,) is a plant seldom equalled in beauty when covered with its brilliantly colored cherry like fruit, of which some people are fond. The species of hazel nuts form admirable bushes; the purple leaved variety being particularly attractive in early spring, and is of very rapid growth. The cut leaved and variegated leaved elder berry are frequently cultivated in shrubberies; and the wild plum, quince, high bush

cranberry, and even the huckleberry need not be excluded when they can be properly disposed.

The whole subject is of much interest, and, as Col. Dewey remarks, in the August *Horticulturist*, "It is of growing importance."

[Mr. Saunders sustains our original position, which is true as regards the farmer and the suburban resident with small grounds. Will some of our correspondents now help us to their ideas of handsome fruit growing trees.—Ed. H.]

Phloxes.—I was much pleased with the excellent article on this subject with which you favoured your readers in the *Chronicle* of the 22d of August. Having been an admirer and cultivator of all the best varieties of this beautiful genus that have yet been sent out either by English or Continental growers, I may perhaps be permitted to add a few more kinds to those already named, that I consider worthy of a place in every collection.

Of Phloxes the varieties may now be said to be almost endless, but some of them so closely resemble each other that it is only by carefully comparing them that their slight differences are discovered; such distinctions are therefore undeserving of attention; only the best formed and brightest coloured in each particular class should be kept—the rest should be discarded.

As soon as I receive any new kinds I have a bed prepared for them, and plant out several of each sort, always keeping the newest varieties in beds by themselves. The older kinds are also planted in beds beside the new ones, so that when they are all in bloom I make my comparisons and memoranda respecting them. Whenever I am convinced that any of the new ones excel the older kinds in habit or beauty, I then throw away the inferior sorts, and by so doing I find that a very beautiful collection can be formed without being encumbered with a multiplicity of names.

I receive between 30 and 40 different sorts from various sources annually, and I often find among them only four or five worth keeping, or that are either distinct from or superior to those I have already grown. If, therefore, I had not some principle to direct me I should by this time have at least 500 names of Phloxes on my list; but by making annual selections as I have described I reduce the number to less than 100.

However strange it may appear it is a fact that the Phlox has only lately been treated with anything like care or attention. Generally they have had allotted to them places in borders among shrubs, where they have been either overgrown by other plants or completely starved; for the poor Phlox has often had to do service where nothing else would flourish. All must however, I think, admit that a little care and attention bestowed upon it will be amply rewarded; few plants are so useful either for pot culture, cutting for bouquets, or "clumping" in the flower garden, and if proper attention is paid to height and colors at planting time, a succession of bloom may be had from June until November.

The following I can with confidence recommend: Addisoni, Alba magniflora, Herincq, Josephine Pariot, Madame Fontaine, Madame Rendatler, Primulæflora, Roi Leopold, Abdel de Lepinium, Comte de Chambord, Impératrice Eugenie, Laurence de Cerf, Madame Delahaye, Mons. Valery, Rève d'Amour.—*William Barnes.*

PENTSTEMON CORDIFOLIUS.

Raised from seeds brought home by Mr. Hartweg in June, 1848, and said to be a shrub four feet high, from the mountains of Santa Ines, in California.

A downy-stemmed half-shrubby plant, with a trailing or spreading habit, so that it is well suited to hang down over stones or rocks. Leaves dark green, shining, cordate, serrate, slightly downy. Flowers in one-sided, narrow, leafy panicles, which sometimes measure more than a foot in length. The branches of the panicle are hairy, and bear each from three to five flowers when the plants are vigorous. Calyx covered with glandular hairs; corolla not quite an inch and a half long, rich dull red; the tube almost cylindrical; the upper lip straight, nearly flat, slightly two-lobed; the lower three-parted, spreading at right angles to the upper.

It has so little the appearance of a Pentstemon that it may be expected to be regarded hereafter as a distinct genus.

A hardy little shrub, growing freely in any good rich garden soil, and easily increased by seeds or cuttings in the usual way. It flowers freely, one year from seeds, and lasts in flower from June to October.

It is a very desirable, hardy plant.—*Horticultural Society's Journal.*

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HINTS FOR LANDSCAPE GARDENING.

If buildings, vases, statuary, and other artificial works, are constantly recurring in very extensive gardens, they do not produce the variety which is sought for, but produce endless monotony. So many objects having different expression, cannot form the harmonious whole that should be. They are the costly evidences of great wealth made subservient to empirical taste.

No one can wish to mistake a garden for anything but a work of art—a work in which beautiful forms and lines are recognised, while all its parts correspond so exactly, that the removal of any one of them would derange the whole. As a rule, it may be laid down that curved lines are more beautiful than straight ones. We associate the quality of beauty in the feminine form, of delicacy, of fineness, and of tenderness with them; while angular lines are expressive of roughness, strength, tenacity, and maturity, as instanced in the limbs of old trees, and the forms of solid masses of rock.

In disposing the area of a small garden, it will be all-important to consider well the production of harmony of expression; and to make such arrangements only as will assist in carrying out the objects in view. As to ornaments, it is better to have few of them than to fill the place with those of incongruous character; many of which would be as much out of place as a Goth in one of the saloons of Paris.

It is most important, also, to observe that want of breadth is one of the most common errors in amateur designs. The constant spotting over of lawns without attention to producing massive effects by grouping, and the frequent shutting up retiring verdant glades by plants, are sources of much mischief in this respect. In every place there ought to be one or two leading breadths of as much extent as possible: and if an aërial distance can be got at the same time, it will much enhance the effect by leading the spectator to suppose that the property is most extensive in that direction.

Great care should be taken to avoid that regular mixture of shrubs and trees which is too often practised, and which produces the most perfect monotony: it is far better that one kind should prevail here, and another there—a system which produces true variety. When one passes from a grove of Elms to one of Beech, and again to one of Oaks, one feels that "a change has come o'er the spirit" of the scene; but where Oaks, Beech, and Elms are mixed, it is all sameness.

Let us counsel our friends, who are intent upon leading a quiet suburban existence, having finished the toils of commercial life, that, should they purchase a place to exercise their skill upon they should have the opinion of a clever man as a landscape gardener, and have a general plan designed and prepared, after thorough consideration, to be commenced upon, and carried out progressively; thus avoiding the many rocks a-head upon which such people split. Let them, also, get to understand the rules and principles of the art in a general manner. So will their places yield them more satisfaction; and the public in visiting them will be spared the excruciating pain of seeing Grecian bases of the first class standing upon bare earth without any pedestals at all.

In no sphere of his observation has man so many, so beautiful, and so

varied a collection of graceful curves presented to his view as he has in the varied forms and inflections of the stems of gigantic grasses with their nodding plumes of silvery feathers; in the tendrils of the Vine, the Hop and the Ivy; in the stem of the Rose, bent with its fulness of the dew of Heaven into a graceful curve; in the varied and infinite conformation of leaves, flowers, and fruits. It would be sad indeed, if, while having such lessons from the book of the Divine Artist Himself, man should not avail himself of the exquisite delineations of beautiful forms which the book of Nature presents, and appropriate to himself in his gardens those lines of beauty which are so adapted for his purpose.

The exact expression of beautiful lines is an important point in the keeping of a garden. Every curve and sinuosity should be most regular and true; cut with the utmost exactness, if in grass; and trimmed with mathematical precision, if in box or such-like materials. For, however good the design may be, if it is not artistically carried out it will prove a failure.

A small garden well kept is always much more satisfactory than a large ill-kept one. Let no one, therefore, attempt to do too much; but let every person who intends designing a place consider and proportion his means to the end. Thus will the beauty of propriety be given to the creation of artistic skill; and whilst the art of design is prominent in the whole, the beauty of utility and propriety will always conduce to the superior enjoyment of the owner and his friends.

We greatly advocate that, whatever the style of the house, whether Italian, Grecian, or Gothic, all its subordinate offices, whether attached or detached, should be in the same style. We have marked many deviations from this rule with regret.

"Taste," says Mr. Allison, "is, in general, considered as that quality of the human mind by which we perceive and enjoy whatever is beautiful or sublime in the works of nature or art." But in the investigation of the beauty and sublimity of material forms, there are certain rules and axioms to which we must refer as established principles; and it is only by a knowledge of these principles, by study and reflection, that we can lay the foundation of correct "taste." S.

ROT IN GRAPES—A SUGGESTION.

The Catawba grape seems particularly liable to be affected by a peculiar disease, which is termed rot; the berries when about full grown become spotted and exhibit an appearance very similar in structure and character to a badly diseased potato. Not only is there a similarity in the appearance of the two, but both are greatly accelerated, if indeed they are not occasioned, by wet soil.

Grapes growing on undrained clayey subsoils will generally show the rot after a heavy rain in July; on dry gravelly soils they are seldom affected; or if the season prove dry they will mature perfectly even in the clayey soil. I am familiar with a trellis of the Catawba grape which has only ripened one crop during the past six years, and that was in '56, if I recollect rightly, when we had a remarkably dry summer and fall. The subsoil where they

are growing is very strong yellow loam, retentive of moisture, and undrained. I have observed after a heavy rain in June that the young growths would look rusty and diseased, and the berries invariably rotted.

I have observed the Catawba grape closely for many years, and my observation leads me to believe that the rot is owing to an excess of water at the roots, rendering the ground comparatively cold, at a time when the air is very warm; of course this will be of rare occurrence where the surplus water in the soil passes into underground drains. I would suggest to those who have strong or clayey lands to put in a row of draining tiles under each row of vines, and if there is no convenient fall for the water to pass off, then dig a round pit three or four feet deeper than the drains, fill this pit with broken stones, or oyster shells, and lead the drains into it. The accompanying sketch will illustrate my meaning, and I am very confident that the remedy will be found efficient. X. Y. Z.

SALVIA GESNERÆFLORA.

I PROPAGATE and cultivate this without heat. I take cuttings in March or April; good plants always push from the base or the roots in March; as these are useless for flowering, I cut them off, and select cuttings from them—strong short bits with three joints. I take the leaves from the bottom joint only, and insert the cuttings singly in the middle of thumb pots filled with loam, silver sand, and charcoal, sprinkling them with water, and covering with bell glasses. I then place them in the shade in the greenhouse, sprinkle the leaves and wipe the damp from the glasses once a day; and thus managed, they soon strike. I inure them to the air of the house, harden them gradually, then place them in a cold frame—when the pot is filled with roots, I shift into a pint pot; when that is filled, into a two-quart pot; and when that is full of fibres, give the final shift into eleven-inch pots. They must not be allowed to get pot-bound till they have had the last shift, or they will be stunted. Each plant requires one stick to keep it upright. I never stop the leader, nor any shoot, but let them take their own natural form, which is pyramidal. The frame will preserve them from injury by wind, for I never put the lights on, except to preserve the inmates from frost and excessive wet, and I always tilt them during rain. I introduce the plants to the greenhouse in October, let them have plenty of room and light, and water when necessary. As the pots are very full of roots, I give water till it runs through the hole at the bottom. When the flower buds show color I give weak manure water every watering. If the house requires smoking while they are in bud or bloom, they should be removed to some other place for the night, or they will lose their flowers and forward buds. The soil I use is light loam, mixed with a little old cow-dung and silver sand, and a liberal quantity of broken charcoal.—T. O.

NEVER TOO LATE TO LEARN—OR THE AMATEUR AND M. D. GARDENER.

BY FOX MEADOW.

ON a beautiful morning in the month of July an amateur stepped into a garden of which an M. D. had the charge.

Good morning, sir, said our amateur—so you are pruning and stopping your young pear trees?——Yes, sir, and are they not beautiful trees?——Well, said our amateur, they would be, if the trees were properly pruned and managed. The trees are growing luxuriantly, and could be made *splendid and fruitful*, as well as superb pyramids. But, Mr. Amateur, do you mean to say that these are not good symmetrical trees.——Oh, no sir! far from that; they are indeed so much so that they look as though they were cast from a mould. They are from the ground up a perfect pyramid. No blanks nor vacancies of branches anywhere—all, I presume, a great portion of the horticultural world ever dreamt of, or would desire as a tree.——But still, Mr. Amateur, you seem to *smile* at my trees. What is it you are laughing at? Is it because I have no fruit?——No, sir, for in that case I am very sorry.——Then, pray tell me, why smile at my trees?——Ho! *you* are a professional, I am only an amateur—could not pretend to suggest to an M. D. like you.——Nonsense, sir; do tell me what you are laughing at? ——Well, sir, I will, and then we shall see if you will not laugh too. Now don't be angry, but don't you see how much time you have spent pruning with your knife *that* tree? Yes, and what have you produced? Nothing but a splendid bundle of sticks. You could have taken any common hedge sheers and given just such a form in much less than one half the time. Why do you not follow the same stumping system on those vines under glass during their growth? You see, sir, you have made your pyramid pear trees the same way you make those splendid hedges—stop, clip and chop continually and then you have *the* hedge. If these pear trees were only a little closer together they would form a splendid hedge.—— But, said our M. D., if we do not cut back and stop, as directed by our best pear-growers in the country, how are we going to produce the *form*, the *pyramid?*——Never mind the best growers in the country, sir; let us do our own thinking, and work out our own plans, and never trust to others to think and act for us. If the Italians had thought and acted for themselves, and not trusted to somebody else, Italy to-day, perhaps, would have been free. We will leave the poor Italians to work out their fruitfulness and *glorious independence*, whilst we work out branches with fruitful spurs on our pyramidal pear trees.

M. D. listened attentively. Then it occurred to his mind that he should like to see or know *how* his amateur friend pruned and trained *his* trees; so the relative question was put, and answered as follows: The difference between our pruning, stopping, training and getting into fruit is this: The tree consists of one main erect stem; the branches are brought out nearly horizontal, equidistant and entire, *i. e.*, free from all lateral shoots,

resembling much in its appearance a spruce fir. How we manage these trees we will now endeavor to explain. First, then, we go to a nursery and select trees one year old from the bud, and stop there till they are got up; we look well after the men who get up the trees, and see that they take hold of them close to the ground when about to draw them—and we watch this part of the operation pretty closely, for if we did not, they would invariably take hold higher up, just where we should wish to cut back the tree too; and by their taking hold on this particular part they rub all the eyes out, and we should be pretty lucky if some of the bark did not go as well. Once they get hold, up must come the tree, eyes or no eyes, and oftentimes roots the some way. The trees are sold; all right, and the boss will get the dimes. I have seen hundreds of beautiful trees completely spoiled through the inattention paid in the handling by the nursery employees.——M. D. remarked that that was the reason why he could not cut back some of his dwarf trees as close as he could have desired, because the buds were rubbed out at the base of the shoot.——Well, sir, I get my trees home sometimes in the way I want them. In planting we bury all the quince and a little more. They will throw out roots from the pear stalk, and the tree is improved by it. The next operation is cutting back, and here we stop, and think, and look a little.

A tree is to be formed.—Let us have the base right. We want four or five good branches and a leader; then we cut back to just as many buds, and we take care at the same time to have the bud that is intended to form the leader (main stem) to be on the side that the young shoots will be perpendicular to its base. Now, if the condition of the soil is right, in the spring we watch the bursting buds, and they come forth with vigor. The side shoots we will call horizontal shoots, and the main stem we will call the leader, for the sake of understanding what we are talking about. Now our horizontals have grown out some six inches; we now nip out their points with the finger and thumb, but not the leader—we allow the leader to grow twelve inches, and then we serve it the same way.

But, Mr. Amateur, what is your object in nipping your horizontal shoots at six inches; is it done to produce two or three shoots from them again?—No, sir, for if that was the case my trees would be just like yours—*a bundle of sticks.* (M. D. looks down.) The object is this, sir: nipped at six inches, all the base eyes, i. e. all the eyes below where we pinched off, burst; one we allow to grow on,—the others form fruiting spurs at once. Should any of these eyes have a tendency to make shoots, you can detect it at once, and you must *make* it a fruiting spur with your *thumb-nail.* Now you understand how these horizontal branches are formed and how the fruiting spurs are produced on them. You see, sir, you can extend to the length you please, and stop the same at pleasure. Now, in reference to the leader; we stop it at twelve inches, and being allowed to grow twelve inches instead of six, it has gained a little more strength.——But, the object, Mr. Amateur, of stopping by so much rule? We want another tier of horizontal branches, sir, and coming from the leader twelve inches above the others, is just close and far enough apart. We also look about on this new wood to see *where* the eyes are going to break, for we want this tier of young shoots to intersect the first, so that when the tree is fully formed every tier of branches sits alternately to each other. You will also find that after you have stopped the leader, it will not break, perhaps, more

than three horizontal shoots; the leader we allow to grow on through the season and next spring cut it back to four eyes, giving a leader and three more horizontals; in this way the tree is furnished with branches from the ground up; no branch interferes with another, and each branch is properly spurred. Each branch of the same strength capacitated to carry its respective weight of fruit. The power of the tree is equally balanced. This balance of power we must watch,—it may trouble us a little in the branches of fruit-trees, but not half so much as it troubles the crowned heads of Europe. If we get a branch that inclines to grow weak, let the stopping alone,—let it gain its balance, but take care and stop the others, if anything *more* than before, for by doing so you throw the sap into the weaker channel.——You grow your *fruiting spurs*, Mr. Amateur, on your horizontals, I see, without the knife?——Certainly. Suppose you take a young tree and head it in every year with the knife—I mean constantly stump it down—when would you expect to get fruit from it?——M. D. smiles,—thinks he has been doing the same thing with his dwarf pear-trees. This has been a long chat, Mr. Gardener, so I bid you good-day.——M. D. thinks he understands what his amateur friend means,—thinks he can *see through a pear-tree*, and laughs at his own. *No wonder they do not fruit*,—(wonder how many thousands of *bundles of sticks* there are in the world beside his own,) and believes, too, that it is NEVER TOO LATE TO LEARN.

DISEASES OF FRUIT TREES.

BY J. W. FELT, CRYSTAL SPRINGS, MISS.

BELIEVING your valuable periodical is extensively circulated through the Southern States, I desire making it the medium through which to give some hints upon fruit-culture that I deem of importance in this latitude.

The observant frequently notice the bark upon the stems of trees, and especially the apple, perforated with numerous holes, sometimes of sufficient size to admit the moisture and encourage decay. What causes these holes, and how are we to prevent their formation?

In order to discover a remedy we must consider the manner in which they are formed.

These holes are first made by worms, and enlarged by birds in search of the grubs. The grub is hatched from eggs deposited under the shaggy bark so frequent upon the stems of fruit trees. This rough and half disconnected bark is the result of an inactive circulation of sap; the same as the hand becomes callous by constantly grasping some hard substance, and interfering with the free circulation of blood. This imperfect circulation of sap, I think, is the result of training the trees with too *long stems*.

If the trunk of the tree is too long, the top does not protect it from the sun's rays. While the sap is ascending from the roots into the top, a considerable portion of its aqueous substance evaporates through the bark,

leaving the remainder thick. The sap vessels become filled with a gummy substance which obstructs the free circulation, and causes the rough, hard bark to accumulate.

As the tree increases in age and size, this hard bark forms a perfect shell around it which greatly impedes the free circulation, especially when the sap is in the condition above mentioned. If the tree possesses a sufficiently vigorous constitution to continue growing, it will burst this shell, if not, it will struggle along for several years and finally die. After the increase of the stem has forced this hard bark to crack, the sun causes it to warp up, forming scales, and affording excellent places of refuge for insects to deposit their eggs.

If trees are trained with low heads there will be no stem, or at least not much to become diseased, or for insects to prey upon. The top will shade the stem and roots; keep up a greater equilibrium in the temperature of the soil; guard against drouth; admit of an active circulation; and by saving the constituents of water, which would, to a certain extent, be lost by evaporation if compelled to ascend through a long unprotected stem, afford the fruit a greater proportion of hydrogen, an element which exerts a great influence over the flavor of the fruit.

That disease known as the frozen sap blight, and so destructive to pear-trees in this vicinity, is more prevalent in seasons succeeding a warm and late fall, terminating with a sudden freezing. The disease I consider is caused as follows: The late warm weather peculiar to this climate some seasons, recommences an active circulation late in the fall, which fills the sap vessels with aqueous substances, and more particularly the young and topmost branches. The rapidity with which cold weather commences does not afford sufficient time for the watery substances within these branches to either enter into the formation of woody fibre or pass off by evaporation, consequently remains within them as such, and when frozen increases in volume, tears the sap vessels, and establishes a disease which makes its appearance the following spring.

If the tree had been trained with a short stem, the top with its cooling shade would not have permitted the soil to become sufficiently warm to excite the tree into a late growth; circulation would have ceased, and the leaves have dropped off at an earlier period in the season; the new growth would have had sufficient time to attain some degree of solidity, and the tree would be free from all danger of frozen sap blight.

It is frequently observed that dwarf pear-trees are comparatively free from this disease.

This peculiarity is very easily explained when we consider they are not only trained with short stems, but by being worked upon the quince, discontinue growth sufficiently early in the season to admit of the watery substance, either entering into the formation of woody fibre, or to pass off by evaporation, thereby affording sufficient time for the new wood to become able to withstand the vicissitudes of the weather.

The benefits the tree derives from a low head are quite as perceptible in the spring as in the fall, as the shade produced by the top retards the period of blossoming, and frequently prevents the fruit from being destroyed by late frosts.

The length of the stem also increases the danger of having the fruit blown off, in which case the fall is sufficiently great to render it worthless.

The force of the wind against the top, by acting upon the lever principle, causes a great strain upon the roots, often displacing or breaking them, and frequently overturning the tree. If the stem is sufficiently long to admit of its bending, the sap vessels on the *outer side* of the curve will be forced to *expand*, while those on the *inside* will *contract*. Both positions being unnatural extremes, exerts a ruinous influence upon the health and longevity of the tree.

Many persons object to low-headed trees as they do not admit of ploughing underneath the branches. If they would consider tearing up the soil, and bruising or breaking the roots immediately near the stem, in a manner so frequent among orchardists, they would not only discover they were destroying the facilities of the tree for obtaining sufficient aliment to mature properly,—even a medium crop of fruit,—but injuring the surface roots upon which the tree is greatly dependant for a large proportion of the animal and vegetable matter essential for its formation.

While cultivating fruit-trees at the South, I have permitted the following rules to direct my operations. My success thus far has exceeded my own sanguine expectations.

1st. Get good healthy Southern raised trees, of such varieties as require the conditions peculiar to a warm climate for their perfect development.

2d. Plant them on fertile land, and keep the soil in good condition.

3d. Train the trees with short stems. Two feet in height is sufficient for standards.

4th. Brush off all superfluous shoots *while small*, and *never* let a branch grow unless wanted.

5th. Trust the remainder to Providence, and my word for it, you will have fruit.

ABOUT THE POKE-WEED.

BY J. STAUFFER, LANCASTER, PA.

The genus to which our common Poke belongs, was named Phytolacca, by Tournefort, a barbarous combination of the Greek, *plant*, and *lacca*, a coloring substance like Lake or Laque, or, as Dr. Gray states, the French *lac*, which the purplish, crimson color of the berries resembles when fresh, but every school-boy knows how speedily it turns to dirty yellow; which may again be restored, however, by the application of an acid.

Parkinson, in his *Theatrum Botanicum*, published in 1640, denominates it "Solanum Magnum Virginianum rubrum." This is one of the oldest accounts found of it. Plukenet conjectures it may be the *Cuechiliz tomatl* of Hernandez, so vaguely described. The plant is now found in Europe from Portugal to Greece, and in the Barbary States in Africa. There are seven species described; viz.: 1. the P. Octandra; 2. stricta; 3. Abyssinica; 4. decandra; 5. icosandra; 6. dioica, and 7. dodecandra—thus making sad havoc in the *artificial classifications of Linnæus*, as their several names imply; we have but one species common to the United States; this has ten stamens and ten styles, and is the *Phytolacca decandra*.

PHYTOLACCA DECANDRA.

This well-known weed, called *garget, cocum, jalap, pigeon berries*, and commonly Poke—corrupted from the old Virginian name of Pocan, needs no special description, being so abundant in all parts of the United States, flourishing along fence rows, on the borders of woods, and in newly-cleared and uncultivated fields. Flowering in July, and ripening its crimson fruit in autumn.

The annual stems often attain the height of from 6 to 10 feet. Those were cut for walking-sticks, and paraded in the political processions, by the partisans of Jas. K. Polk, of Tennessee, as significant emblems, in the campaign of 1844, as many will remember in our section, at least.

Poultry and birds are fond of the berries, but if eaten in large quantities, they give the flesh a disagreeable flavor. The juice contains saccharine matter, which, after fermenting, yields alcohol by distillation. "From half a bushel of the berries, six pints of spirits were obtained, sufficiently strong to take fire and burn with readiness. Two ounces of this given to a dog occasioned nausea, drowsiness, spasmodic motions, but no vomiting."—*Loudon.*

A few drops of lime water added to the purple juice of the berries, change it to a yellow color: this yellow liquid Mr. Braconnot considers the most delicate test, and found it to be four times as sensible to the presence of acid as that of the infusion of litmus—requiring, however, to be used immediately after it is prepared, since a few hours cause a spontaneous change in it, ending with a deprivation of color.

"Poke-root is emetic, purgative, and somewhat narcotic; in over doses it produces excessive vomiting and purging. The dose of the powdered root as an emetic is from ten to thirty grains; as an alterative from one to five grains; a saturated tincture of the berries, in dilute alcohol, is useful in rheumatic cases, in the dose of a fluid drachm three times a day. A strong infusion of the leaves or root has been recommended in piles. An ointment prepared by mixing a drachm of the powdered root or leaves with an ounce of lard, has been used with advantage in cutaneous diseases. It has also, in the form of an extract, acquired considerable reputation in the

cure of every kind of cancerous disease."—*Extract from the United States Dispensatory.*

The following two letters from Dr. Franklin—one to Dr. Colden, the other to M. Dubourg—may be of interest, as a matter of history, and are appended in conclusion:

"I am heartily glad to hear more instances of the success of the Poke-weed in the cure of cancer. You will deserve highly of mankind for the communication. But I find in Boston they are at a loss to know the right plant; some asserting it is what they call Mechoacan, others other things. In one of their late papers it is publicly requested that a perfect description may be given of the plant, its place of growth, &c. I have mislaid the paper, or I would send it to you. I thought you had described it pretty fully."

DR. FRANKLIN TO M. DUBOURG.

"I apprehend that our Poke-weed is what botanists term phytolacca. This plant bears berries as large as peas. The skin is black, but it contains a crimson juice. It is this juice, thickened by evaporation in the sun, which was employed. It caused great pain, but some persons were said to have been cured. I am not quite certain of the facts; all that I know is that Dr. Colden has a good opinion of the remedy."—NOTES—*Bigelow's Medical Botany, Vol. I.*

[Some country people who are too lazy to make an asparagus bed, boil and eat the young shoots with a little vinegar, finding it very palatable. For birds in cages, especially the robin, the ripe berries are much employed. —ED. H.]

GOLDEN HAMBURGH GRAPE.*

BY JOSIAH SALTER, ROCHESTER, N. Y.

THE grapes which I sent to you in April were the fruit of a new variety, called the Golden Hamburgh, which I imported with some others from England in the spring of 1858. The plant was not a very large one, being only a guinea vine, and I planted it in a 7x9 glass box, in which it stood during the summer in the cold grapery. Being somewhat impatient to see its fruit, I placed it in the propagating house during the winter of 1858-9, without allowing it any rest after it had ripened and shed its leaves, and on the 24th of January the vine was in flower. It set admirably, although in mid-winter, and by the 1st of April the grapes were fully ripe—thus being, as I believe, the first of this variety fruited in this country. The vine produced several bunches, which all set well, as I said before; but 1st, because of its very small root room; 2d, the size of the vine; 3d, the fact that it had had no rest; and 4th, the season of the year,—only three of the bunches were allowed to come to maturity; but these ripened perfectly.

The one which was drawn for the *Horticulturist* was the best shouldered bunch of the three; but the berries were not the largest, nor were they as fine as of the other two. Had there been but one bunch, as erroneously

* See Frontispiece.

stated on page 284 of this year's *Horticulturist*, it probably would have been finer and its berries much larger. Many of our Rochester gardeners and amateur grape-growers came to see and to taste the fruit, and all pronounced it "truly excellent," "first-rate," "the best of white grapes," &c., &c. The skin is thin and tender, the flesh is tender and delicate, very juicy and luscious, and I think its flavor superior to that of the Black Hamburgh.

The Golden Hamburgh is a new and perfectly distinct variety, originated at Stockwood Park from the Black Hamburgh, impregnated with the Sweetwater. The first premiums were awarded to it in 1853, and it has since then maintained its high character, and steadily received premiums, certificates, medals and diplomas, each year it has been shown. Its habit of growth is somewhat between that of both its parents, its wood being round and firm, short-jointed, and of a whitish green color. Its foliage is large, like the Hamburgh, but of a lighter and brighter green, sometimes lobed, and its veins and midrib tinged with bright red or crimson. The bunches are well shouldered, and the berries hang loosely on the bunch; it is a good setter, and requires good thinning. The berries are large, many of them being an inch long and seven-eighths of an inch in diameter, of an oval form, and of a pale yellow color.

If a young vine will do as well as this has done without any "rest," and with every circumstance unfavorable, a mature vine will assuredly do a great deal better in summer, after its seasonable rest, with its roots in a vinery border, and its branches trained to the rafters. This Golden Hamburgh is destined to become among white grapes what the Black Hamburgh is among black grapes—the best of white grapes for a cold vinery and also for pot culture.

[The above is a correct statement: the figures we have on hand of this grape as grown in England on mature vines, represent the berries as considerably larger than our plate, and of a deeper golden color; in fact, the picture of the bunches was too large for our pages, and we waited for some time to get an American representation such as we could endorse, and it is now presented to our readers. The flavor of this fine acquisition is delicious. It has also been fruited in Philadelphia, and probably elsewhere, and has excited a very lively interest with grape-growers wherever exhibited.—Ed. H.]

NEW PLANTS AT HENDERSON'S & VEITCH'S, LONDON.

Mr. J. Appleby communicates to the *London Cottage Gardener* the following list, with observations on their most striking new plants:—

Maranta metallica.—This is a new species, of a compact low habit, with the midrib and veins beautifully silvered over. It is from tropical America, and well worthy of culture. Increased by division.

Aspidistra variegata.—A stove plant from Japan, with leaves springing from the rootstock. They have stalks a foot high; and are fifteen inches long and six inches wide; lance-shaped, tapering to a point. Ground color a dark green, striped with pure white. The variegation is very irregular: in some leaves one side will be all white; on others, the white is regular in long lines. The variegation is most perfect when the plant is grown in

very sandy soil. The flowers are very curious both in form and position: they only just peep out of the soil. It is a very useful exhibition plant, the variegation being so distinct. Increased by division.

Maranta eximia.—A beautiful distinct species, regularly striped across each leaf with whitish-green and dark green. The under side is a rich copper color; form bluntly oval, ten inches long by five inches broad. Increased by division.

Solanum pseudo-capsicum variegatum.—A greenhouse species from Madeira. Half shrubby. Leaves a long oval, irregularly margined with white. It has small white flowers, succeeded by round yellow berries. Should be increased by cuttings, in order to keep the variegation. Though not so showy as many variegated plants, yet, on account of the variegation being so profuse and distinct, it is well worthy of a place in a collection. It thrives best in a moderately warm stove.

Begonia Griffithsii, var. *picta.*—A handsome medium-sized plant from South America. Leaves nearly round, and of a dark-green color; with a zone in the middle of a greenish-white. The zone shows through the leaf. Underneath, the color is crimson. Increased by cuttings; though there is little doubt it would increase by laying a leaf on sand in close heat, dividing it in many pieces in the same way that the beautiful Begonias raised from *Begonia rex* are increased.

Anœctochilus striatus, var. *pictus.*—A distinct lovely species, supposed to have been brought by Mr. Gibson from the Khosea Hills, India. It is a beautiful plant, with a distinct stripe of golden yellow down the centre of each leaf. Whoever has the means to grow Anœctochiluses should procure this variety. It requires the same treatment as the rest of the genus. See former descriptions, and what I have to say about the tribe when describing what I saw at the next and last nursery I had a peep at—viz.: —

Messrs. Veitch & Son, the Exotic Nursery, Chelsea. The collection of Orchids in this far-famed nursery, is, perhaps, unequalled in the world. There I saw, for the first time in bloom, the rare *Angræcum sesquipedalis*, with flowers seven inches across, and of a leathery substance, and a rich creamy-white color. Also a lovely new Cattleya, with deep purple sepals and petals, and a lip of a rich crimson color. It is not named yet. The flowers are five inches in diameter. Also a new Cypripedium, with its foliage broadly striped with pure white. It was not in bloom.

Messrs. Veitch possess the greatest number of the lovely-foliaged Anœctochiluses I have ever yet seen. They grow them planted out in rows, under a two-light frame, in a hot stove, in a compost of sphagnum and very fibry peat, largely mixed with silver sand.

Besides the older sorts, I noted *Anœctochilus cordatus*, which seems to thrive the best of all in that frame. The leaves are more distinctly marked than *A. setaceus*, and even richer in metallic lustre.

A. El-Dorado, has lanceolate leaves, terminating in a point. Over the whole leaf there is a rich, reddish cast; which, together, with the golden streaks, renders this a strikingly distinct species. It is new and rare even here.

A. Veitchii, has light green veins; the rest of the leaf is of a lustrous dark-green. This is, also, new and rare. It is from Java.

A. Lobbii.—This species is in the way of *Veitchii* in colors; but has longer leaves, and, altogether, darker in hues.

A. Maulii.—Named after Mr. Maul, nurseryman at Bristol, who, I believe, imported it from India. It is in the way of *A. zanthophyllus;* but the broad stripe down the centre is much narrower, and, I think, more distinct.

I had some difficulty in withdrawing from these most beautiful and interesting plants; but night was approaching, and so I reluctantly left them.

FRUITS: ON WHAT DO THEIR QUALITIES DEPEND?

I am well aware that this is a question which no person is able fully to answer; involving, as it does, so many considerations, and so many debatable points, which await a vast amount of inquiry before they can be determinately answered. Such, however, constitutes no solid ground for avoiding an investigation. Our Pomological societies are doing the State some service in this matter. No man, however experienced, but may enlarge his mind by examining the statistical information that their reports contain. I verily had thought that I knew all about the *Winter Nelis* Pear—a great favorite of mine for years; but I could not but feel that I had acquired interesting information in comparing the various conditions, both above and below ground, which certain exhibitors furnish: added to this, there was the testing of my own opinions as founded on what I had experienced. I do hope that those who continue to exhibit will carefully state a few of the main conditions under which the fruit was produced. No man can put such information to better use than a really good gardener—a man experienced in such things. There is no spoiling him with crude notions; and, after carefully digesting the whole, he is in a capital position to sum up the evidence, and, as Burns said, to "prent it."

On what conditions, then, does the quality of fruits depend? Let me first state what conditions are inimical to quality in the average of fruits:—The ripening too much hurried; ripening, in some cases, arrested through low temperatures; excess of root-moisture; also of humidity in the air; gross and succulent growths; deficiency of light; a stagnant air through the want of a due circulation; and lastly, the attacks of insects.

Now, these remarks, although applying, in some cases, almost exclusively to in-door fruits, I intend to offer in such a shape as to be common to all.

A forced or hurried ripening, whether occasioned in-doors or out, is in general averse to high qualities. This may be particularly observed in peaches and melons; and is doubtless the reason why fine-looking fruits, at our exhibition tables, frequently do not possess those high qualities which their appearance and kind indicate. We also know, that, in hot climates, many of our fruits become vapid and worthless; but Nature has provided special kinds adapted to the climate. It is here necessary to observe, that an over-slow or retarded ripening is, in some cases, prejudicial; and this is, perhaps, most manifest in some of our pears, which, if kept much beyond their natural ripening period, assume the character of petrifactions in some cases.

Excess of root-moisture is to be avoided. Thorough drainage out-of-doors, and a cautious use of the waterpot in-doors are the means within our reach to avert this evil. Fruit-bearing plants are apt—like many of the animal creation—to prove gluttonous, especially when there is a heavy draw on

their system; and in the ripening process, where very high flavor is desired, we do not want too much of the water:—it is more on the high and perfect elaboration and assimilation of the stores of the plants that we have to depend. Nevertheless it may be laid down as an axiom in fruit-ripening, that the foliage must be in a perfectly healthy condition when the fruit is ripening, or undergoing that change which forms a crisis in their history. Thus we find, that if melons—it matters not what kind—have decaying foliage when the fruit is turning for ripeness, the flavor is sure to be deficient, and the eye-part becomes spongy. It, therefore, becomes necessary with all thin-foliaged fruits (which, of course, are liable to sudden and profuse perspirations), to keep up as much moisture at the root as will sustain a healthy foliage.

Too much air-moisture is, of course, not desirable. This, out of doors, can scarcely be avoided; but, in forcing processes, it is under control. It produces an inactive atmosphere, and not only impedes, in degree, a free transpiration, but also a proper admission of light. In fact, the ripening period is no proper time for any undue amount of absorption.

We will come now to succulent growth, as, in most cases, a foe to intensity of flavor. The peach is, at once, a good instance. How is it that we seldom obtain such large and fine peaches from young and gross trees that we do from those arrived at maturity? Simply because the growth, at extreme points, being so exuberant, much of the collateral and subordinate wood is robbed for the sake of this great impulse. Pinching these robbers, therefore, in equalizing the sap, causes the inferior portions to receive a more regular supply. In short, the remarks apply to almost every kind of fruit, especially to those of rapid or impulsive growths. Thus, we know that it is a common practice to stop or pinch pines, melons, cucumbers, &c., all of which are of rapid growth.

Deficiency of light is the next consideration as concerns flavor and quality. It is well known that both flavor and color, in fruits or vegetables, can only be obtained through the influence of a liberal amount of solar light. But not only is flavor in fruits dependent on a liberal amount of light; their size and general character are also particularly concerned in the affair. Who has not noticed the inferior character of fruits, such as apples, pears, and other ordinary fruits, in the interior of badly-pruned or neglected trees?

A free circulation of air is of the highest importance in giving flavor and character to fruits. This, it may be said, more immediately concerns those under glass; inasmuch as the means taken to secure light out of doors will guarantee a free circulation of air. Melons coddled for want of air can never be full-flavored. Indeed, the richest I have ever tasted have been from frames or pits, which had air liberally all night as well as day: they were, consequently, ripened by the slow process. Peaches, too, require abundance of air all the time they are ripening, and they must have time.

Freedom from insects is indispensable to flavor in fruits. Who has known good grapes, melons, peaches, &c., produced from trees infested with red spider?

I think these together are essentials to the production of first-rate fruit, and without a due attention to them, such cannot be obtained. But, of course, as the foundation-stone, we must have a healthy and well-conditioned root and good kinds. That atmospheric influences—heat, light, air, &c., variously

modified and combined—produce varying results in the fruit, can be well evidenced on all sides. We gather *Marie Louise* Pears from a generous aspect on a wall; the fruits large, finely-skinned, and of a beautiful creamy appearance; we fancy we can almost see into them without cutting. We take a second lot from well-handled espalier, or ordinary tree: they are but two-thirds the size, and their skin a complete coat of fine russet. The first shall be exceedingly fine in texture, but the flesh not particularly rich; the latter less fine in texture, but of a much higher flavor. This at once points to differing atmospheric conditions, the soils being alike.—R. ERRINGTON, *—in London Cottage Gardener.*

GRAFTED CONIFERS.

BY MR. W. PAUL, OF THE CHESHUNT NURSERIES, HERTS.

I HAVE long been satisfied that the popular prejudice existing against grafted Conifers has no substantial foundation, *provided proper scions and stocks are used.* But in no branch of horticulture is this matter more important, or worthy of more attentive study. It is unfortunate for purchasers that unsuitable natures should so readily unite to assume the appearance of healthy and perfect trees, while in reality they contain within them the seeds of decrepitude and early death. We could almost wish it was not so; but, as it is so, the best guarantee against disappointment and loss rests in the intelligence, experience and honesty of the cultivator.

It is well known that the heavy wooded Pines—as *Pinus ponderosa* and *P. macrocarpa*—will grow very well if grafted on the Scotch Pine; but, so treated, they soon over-swell the stock, become top-heavy, and pass into a stunted and deformed state. If, however, these kinds are grafted on the Austrian Pine, *and the scions are rooted from the lower end,* perfect and durable trees are the result. And this is but an example where many cases of a like nature might be adduced.

But there is also an objection against grafted plants existing *in point of time,* rather than in fact. If *side-shoots* of Pinus and Abies are used as scions, however suitable the stocks, a portion only will form leaders, and these at long intervals of time. Such, therefore, should not be purchased until they have attained the condition of perfectly-formed trees, with good leaders; or the purchaser may have to wait for the *dénouement* somewhat longer than is agreeable.

Once more. Using a tender stock, as the common Cypress, or China Arbor Vitæ, for the genera Cupressus and Thuja, is objectionable; because such plants are liable to be killed at the root in case of severe frost. With these exceptions, I cannot see why a grafted Conifer should not be as good as a grafted Apple or a grafted Pear; and if the objections rest only on prejudice, it is most desirable that they should be removed.

Let me now adduce one or two facts in support of these opinions. Many years ago, I commenced forming an arboretum, intended to contain specimens of the most valuable hardy trees suited to the open air in the climate north of London; and these now amount to nearly 1000 species and varieties, gathered from various sources, at home and abroad. At the outset,

many of the Conifers could not be obtained otherwise than grafted, nineteen out of twenty of which are now handsome and flourishing trees. *Pinus Lambertiana*, grafted on *P. excelsa*, is fifteen feet high, and everything one could wish for. *Pinus macrocarpa*, grafted on the Austrian Pine, is sixteen feet. An incident in the history of this latter tree may not be uninteresting to your readers, as showing the advantages arising from the application of such horticultural knowledge as we may possess.

The first year after being turned into the ground, the plant made but little progress, which led me to suspect that all was not right at the root; accordingly, in the month of October, the soil was carefully removed; when lo! the scion was found overlapping the stock on one side. The fact was unsatisfactory, but the remedy was apparent. The point of a knife was inserted two inches above the line of junction, and passed through the bark, drawing it downwards the length of four inches. The projecting portion of the scion, which extended and formed callus nearly the half of its circumference, was then pared down with the knife, and the soil firmly replaced. Two years afterwards, the soil was again removed, and the other half of the scion, although firmly and satisfactorily united, was served in the same way; an abundance of roots was emitted from these incisions; the plant soon commenced growing vigorously, and is now as handsome a specimen, for its size, as any in the kingdom.

Take another instance. A small plant of *Picea nobilis* was purchased of the late Mr. Cunningham, of Edinburgh; it was a mere side-shoot grafted on the Balsam, or Silver Fir. For five or six years it retained the lateral growth; a leader then sprung into existence, favored by pruning and liberal feeding; and the tree is now ten feet high, as symmetrical as if it had been cast in a mould.

While speaking of the *Picea nobilis*, I may, perhaps, be allowed to express the opinion that grafted plants may be preferable to seedlings, unless the latter have been raised from foreign seed. It is said that much of the seed perfected in England is the result of artificial fertilization with the Silver Fir. Now, if this is so, is it not probable that the seedlings will partake, in some degree, of the nature of each parent? And if the habit of vegetating before the spring frosts are gone—natural to the Silver Fir, but from which the *Picea nobilis* is happily exempt—be transmitted to these seedlings, they will clearly be of little value; for, while of matchless beauty, the greatest value of the *Picea nobilis* attaches to the fact that it does not grow until late in spring, thereby escaping the damaging effects of the late frosts.—*The Scottish Gardener.*

COMMERCE AND PACKING OF TABLE FRUITS.

Before the establishment of railroads in France, the culture and commerce of table fruits had only importance in the immediate neighborhood of the large centres of population. Everywhere else, these products, difficult to transport, wanted the means of rapid communication. Another difficulty arose from the production of the fruits being limited by want of local consumption, even where the soil and climate were the most favorable for their production; and in years of the greatest abundance, the larger part of

them were lost for want of means of exportation, while other countries, less favored, were entirely deprived of them.

Happily this sad state of things is to end. Now that railroads furrow the whole country, fruits are easily conveyed to where they are needed, even to great distances. Peaches and figs from Provence and Roussillon come to Paris and Lille, and the apples of Auvergne and Normandy are eaten in Marseilles.

To show the rapid progress of commerce in fruits, the Orleans railroad carried to Paris more than twice the amount in 1858 than it did in 1852; more than double the quantity, in the space of five years.

Besides this interior commerce, it is an object to export largely. England, the north of Germany and Russia, buy every year a large proportion of our orchard products.

The adoption of the following measures will help the development of this industry:

First. To make known all improvements by which the highest prices may be produced from a fruit garden or an orchard, by the help of the best theoretical and practical instruction. We have tried to do this everywhere within our reach, both in Paris and elsewhere. In 1858, we gave 360 theoretical and practical lectures of an hour and a half each, to an audience of 3000. We must continue this, and organize in every department some mode of teaching arboriculture.

Second. When fruits are to go some distance, only those of the *first* quality must be raised. These products having an intrinsic value, can be sold at a sufficiently remunerative price to pay for packing and freight.

Third. To cultivate in each locality only those fruits which grow without especial care.

For instance, choose a climate analogous to that of Anjou for raising Pears. A moist climate like Normandy or Auvergne for Apples, &c.

Fourth. To use a suitable means of packing for fruits sent distances.

This greatly neglected subject we will examine now.

PACKING FRUIT.

Fruits with Tender Skin.—The four following conditions are necessary for the safe transport of these kinds of fruit:

1st. To pick them a little before they are quite ripe.

2d. To wrap them and separate each one, with something elastic that they will not be bruised by each other.

3d. To use white wooden boxes of the lightest possible kind to pack them in, of a size adapted to the fruit. Not to have more than one or two layers of fruit.

4th. To fill the boxes just full enough to leave no room for shaking, that would displace the fruit.

Peaches should be packed with only one layer; placing rolls of paper round the side of the box, each peach wrap in one or two vine leaves separating them by oats. Finish by laying a roll of paper over the top. Thus packed, they will go, without any decay, from Marseilles to London.

Apricots, Plums and Figs should be packed in the same way, with the only difference of putting two layers in one box.

Cherries will bear to have three or four layers.

Strawberries are more difficult of transportation than any other fruit, on

account of their consistence and rapidity of decay. Strawberries may be placed in dry earthen vessels holding about a quart.

Filled and covered with paper, they are laid in large baskets, one above the other, separated by straw. The strawberries then reach Marseilles after a two days' journey. We think that this kind of packing might be adopted everywhere, even for the largest strawberries, by leaving them on the stalk.—*Revue Horticole.*

EARLY NORTHERN MUSCADINE GRAPE.

BY P. G. BETHOLET, OLEY, PA.

Mr. Ernlin, late editor of the Pennsylvanian Farm Journal, furnished me with a fine vine two years ago. It was carefully planted among other varieties at a long grape arbor in my garden. It grew finely, and bears this season for the first time; some three dozen bunches of medium size, with fine berries, rather large and free from disease, while the Isabella is more or less afflicted, and the Catawba is a total failure on the same trellis.

The grape is now ripe, while the Isabella is just assuming the amathistine hue. It is a vigorous grower, perfectly hardy, and altogether makes quite a fine appearance.

The color of the berry is a beautiful red, in this respect resembling the Catawba.

Quality—It was claimed to ripen four weeks before the Isabella. It is here only two weeks in advance of it. It is yet a very early grape, and on that account desirable: but in many other respects it does not come up to the announcement.

The general appearance of the vine is somewhat foxy, the leaf, too, shows some alliance to that species, and worst of all, its taste is rather tart and foxy and even its smell is foxy; this latter feature is so prominent that it is quite characteristic, though only a unit under my large grapery. In short, then, it does not quite meet my expectations, for really we have fox grapes growing amongst our hills, just like it in every respect; color, taste, smell and time of ripening; which have, for some time, been planted in the gardens of this vicinity.

It should, however, not be despised, let it be what it may. It has yet much to recommend it. The grape, certainly only a second rate one, is yet much better than none, and this, it is likely from present appearances, will furnish us when all others fail.

By all means I would not do without it, though it does not exactly meet, what was claimed for it, to make it sell perhaps; it is not to be blamed for that. It grows rapidly, is hardy, and yields us fruit when many others fail us.

MR. CHORLTON'S NEW STRAWBERRY.

J. Jay Smith, Esq.—Dear Sir:—The enclosed drawing is a correct representation of a seedling strawberry (Chorlton's Prolific) which I raised seven years ago. The whole branch from which this was taken off contained twenty-two berries. It is a cross between Iowa and Burr's Pine,

and, like both of them, an early variety. In form the fruit bears unmistakable evidence of the latter parentage, while the growth of the plant is equally vigorous with the former, and does not burn in summer. It was tested this season alongside of Wilson's Albany, and was more productive

and better flavored than that excellent variety; the berries are equally large, but not so dark-colored. During the last five years I have made it the principal family crop, and have never had it fail; even when all others were a partial disappointment, this was a surety. Several friends who have grown it, testify to all of my own experience, and I feel confident that it will prove generally, one of the most profitable berries in cultivation.

The plant is a strong grower; leaves large, dark green and leathery, with well-rounded serratures; flowers hermaphrodite and showy; fruit borne on strong footstalks above the foliage, light red, melting and sweet, somewhat pine-shaped, with a neck at the calyx, which renders it easily removed in gathering. With good culture many of the berries will measure from four to five inches round. From a bed planted five years ago I gathered many which were fully four inches, and the soil of very indifferent quality.

It has only been twice before the public, viz.: four years ago as one in a collection of four varieties, which gained the first prize at the New York Horticultural Society, and this season, without competition, at the Farmer's Club in the same city, when it was very highly spoken of. Not having any plants for sale, I have been indifferent in obtaining notoriety for it, and send on to you nothing but a candid statement of my proofs.

Yours, most respecfully, WM. CHORLTON.

New Brighton, Staten Island.

CHERRY GOSSIP.

BY JOHN B. EATON, BUFFALO, N. Y.

NOTWITHSTANDING the frosts of June, which materially injured some varieties, the cherry crop, in this vicinity, so far as I have observed, has been a fair one. I have had an opportunity of examining nearly fifty varieties, (a larger number than I ever before tested in one season,) some thirty-five of which I fruited at home. A few of these were quite new to me, but the greater part of them I have tested at least once before; and as the cherry department of your journal has of late been rather slighted in the pressure of the various pear and grape controversies, I will give you my opinions of some of my favorite sorts for what they are worth.

Without intending to join in the cry against the introduction of new varieties, which is becoming the fashion with many people, on the ground that "there are already too many," and that "there are only a dozen sorts worth cultivating," it is my impression that many of the cherries (not to mention other fruits,) now extensively grown, might better be discarded in favor of superior sorts, of which we have now such an abundance.

The chief difficulty in the way of such a movement is the wonderful diversity of taste which exists both among cultivators and consumers. I do not believe that twenty people could be found in this county who would unanimously agree upon the merits of as many varieties of cherries, pears or apples. Scarcely a fruit can be named, however worthless, that has not at least one friend who considers it too good to be rejected; still I am in favor of dispensing with all fruits which are not at least as high as "good" in the pomological scale, and coincide entirely with the ideas expressed in

your editorial on the subject of fruits "for market purposes," in the last volume. I am aware that I differ on this point from some of my fruit-growing friends, who contend, that if a pear or a cherry "will sell," it is not to be cast out, either from the orchard or the nursery, no matter how unsatisfactory it may prove to the occasional purchaser who *has* a perception of what constitutes a good fruit, although he may not know, at sight, the good from the worthless, and is naturally attracted by a showy exterior. I have been sometimes accused of placing my standard of excellence too high, but am not yet convinced that it is not best to aim at perfection, and attain it as nearly as possible.

The varieties which I class as "best" are Belle de Choisy, not very fruitful; Black Eagle, in my estimation the very best cherry within my knowledge, and not open to the objection frequently urged against it, of being a poor bearer; Coe's Transparent, very delicate; Downton, the best light colored variety that I know, and only second to Black Eagle.

I consider "very good," American Amber, rather small; Bigarreau, or Graffion, very fine, but rather firm for my taste; Bigarreau de Lyon (?), which improves with the age of the trees, and was this season magnificent, fully equal in size and flavor to Black Tartarian, and ripe about the 20th of June; Black Tartarian, not considered by me, as by many, the very best; Burr's Seedling; Downer's Late, capital when perfectly ripe, but unlike some others, quite uneatable until it is so; Elton, very fine, but, to my taste, a little deficient in flavor; Florence, a very close imitation of the Bigarreau. Its ripening a week later, does not, according to my experience, prove constant; Knight's Early Black, one of my favorites, but, I think, rather a moderate bearer, at least on young trees, and not so early as B. de Lyon (?); Late Mayduke (perhaps a local name), later and more heart-shaped than the Mayduke, and somewhat firmer, but quite distinct from the genuine Late Duke; Mayduke, the best of the acid cherries that I have yet seen, and the most useful of all, capital alike for eating and cooking. If restricted to one tree, which I hope never to be, I should be tempted to choose this variety; Ohio Beauty; Reine Hortense, very large, beautiful in color, and appears to be extremely fruitful upon young trees; White Bigarreau, a very old, but not-to-be-despised variety. Upon young trees, I find it very fine, and of good size.

Of the many sorts which are no more than "good," I will enumerate but a few. Archduke, the poorest bearer that I know, this season did better than usual; Belle Magnifique, too acid to be eaten in a raw state; although very late and handsome, I find it so badly punctured by the curculio that few specimens escape; Bigarreau Gros Cœuret is apparently much like Elton; Early Purple Guigne never ripens, the birds taking every fruit as soon as colored; Monstreuse de Mezel, large and handsome, but rather coarse. I have an unnamed sort, strongly resembling it, but, I think, distinct; Napoleon Bigarreau, too firm for me, and deficient in flavor (Bigarreau d'Esperen is doubtless identical); Royal Duke promises well, judging from a few specimens; Waterloo I doubt being genuine. If it is I do not admire it, as it has a strong resemblance to the old Black Heart.

I have been egregiously humbugged, like some others, with several varieties which are not yet in the rejected list. Buttner's Yellow (which I believe is, however, rejected under another name) is one. After waiting some years for fruit of a very fine late cherry, I found it small, dry, tough and

flavorless. Sparhawk's Honey is at best indifferent. Sweet Montmorency, brought out with such a flourish of trumpets a few years since, is quite small, and of very little, if any, value. Tradescant's Black Heart, or Elkhorn, as it is generally called hereabouts, where it is much esteemed by some persons, has nothing to recommend it but the tremendous size to which it can be grown. It is coarse, dry, flavorless, tough, and in my opinion quite unfit for food under any ordinary circumstances. In case of a failure of all other varieties, I might be persuaded to indulge sparingly in it. I do detest these great, coarse fruits; but when I ask people why they cultivate them, they answer, "they will *sell*."

I this season fruited, for the first time, several seedlings from the Bigarreau, planted in 1853. One or two were very late, but too small to be of any value. One bears a strong resemblance to the Black Eagle, in size, color and form, except in being perhaps a little more pointed. The few specimens produced were of fine quality, but unfortunately ripen during the height of the cherry season, when only something very remarkable is now of much account. If it improves, as seedlings so frequently do, it may be worth propagating. Prof. Kirtland has, however, such a very extensive and successful "manufactory" of new varieties, that it seems rather unnecessary for any one else to engage in the pursuit.

EXAMPLE IN A POPLAR TREE OF WHAT NATURE WILL EFFECT WHEN ASSISTED BY ART.

On the 10th of August, 1842, the lightning struck our Lombardy Poplar tree, not far from the house, with a crash as though the house itself had fallen in ruins. This tree, at 18 feet from the ground, branches out into three principal leaders. The one which faces the west received the full force of the thunderstorm, and it exhibited an excavation of 26 feet in length, and at one part of 22 inches in breadth. Independent of this sad stroke at the western side of the tree, its bole to the north was struck at the same time, and denuded of its bark to the extent of 6 feet by 14 inches. Some idea may be formed of the vast injury which this tree received when the reader learns that I picked up fragments of its wood full 50 yards from the spot where it stands.

After a close inspection of the lacerated parts I conjectured that there was still enough of solid wood remaining to resist the violence of the wintry wind. Having cut out all the shattered parts, I placed a series of thick slates on a solid bed of mortar, quite up to where the tree takes its three leaders: thus forming a hard and permanent covering of 18 feet in extent. At the edges of the slates we applied Roman cement nicely sloped off; so that the future wood and bark might have an easy passage over them, at each returning season for increase of growth. Thus, all being rendered safe from wind and rain we ceased our work, and left the tree to Nature's healing care. She has not disappointed us. Yesterday I got up into the tree and I inspected minutely the injured parts throughout their whole extent. Their condition was prosperous in every point of view. The new wood and bark have rolled over the slates to a close or joining within 11 inches, binding the slates down in an everlasting prison.

A Spanish proverb says: "Thou art welcome, evil, if thou comest alone." But, in this instance, our poor Poplar could not have such a consolation; for another thunder-storm broke over it, and the lightning struck it on the northern side, riving off the bark for a space of 33 feet in length, and at places of 15 inches in width. Singular to tell, no apparent injury was inflicted on the wood itself. The bark alone had suffered, so that a new supply of slates and mortar was not required. This victim to the lightning's fearful rage is now in health and vigor, whilst its summer foliage is of as rich a hue as that of its surrounding neighbors. Should future tempests spare it the tree will be quite right again in a few years more; and its bole will be as beautiful as I remember it in times long gone by. The day may come when this Lombardy Poplar's history shall be forgotten. Then, should it be felled to serve domestic purposes, woe to the carpenter's axe and saw! They will have hard work when they shall have penetrated into the interior of the tree.

From this brief account, the admirer of trees may learn that it may be in his power to do wonders with them in their hour of accident, provided that he goes the right way to work, and lets Dame Nature have her own wise course. A lofty and majestic tree is a jewel of inestimable beauty on a villa's lawn, and is worthy of the owner's utmost care.—*Charles Waterton, Walton Hall.*

GRAPES.

BY GEORGE HUSMANN, HERMAN, MO.

Being a constant reader of your valuable *Horticulturist*, and seeing the notices about new grapes from all parts of the country, it struck me that perhaps neither you nor your readers would object to a few words about comparatively old varieties as they have proved, out here West. I mean Norton's Virginia, Herbemont and Concord, which are my special favorites so far. What may turn up in future, among about seventy of the best varieties I have on trial, I am anxious for time to show. But those three have been thoroughly tried, and I can vouch for every word I say about them.

Of the first I send you a small sample of wine, made by Mr. M. Pöschel here, and a description written for, and cut from the pages of the *Valley Farmer*. Please excuse the smallness of the sample; I could only obtain two bottles, which I had to divide into about thirty samples. It is the pure juice of the grape, without any addition whatever.

The Herbemont has been tried here now for ten or twelve years, and has proved uniformly productive, little subject to mildew and rot, is a magnificent bunch, and, in my opinion, hard to beat as a table-grape, although the berries are somewhat small. It is a luxuriant grower, and keeps its leaves until late in the Fall. Its berries are justly described as being "bags of wine." It is, however, somewhat tender, and should be pruned in the Fall, and covered with earth. It will withstand any common winter, but such winters as 1855 and '56 are too much for it. It makes an excellent wine, superior to Catawba, and will at least produce 500 gallons per acre

annually. The Concord has only fruited with us twice, but in very unfavorable seasons. It feels itself evidently at home here, in our soil and climate, not suffering in the least from rot and mildew, and bearing fruit abundantly. It is here much better in quality than either Catawba or Isabella, and fully proves Samuel Miller's assertion, that "those at the East do not know what a really good Concord is," so much does it improve the further it is brought South. I am confident that at least $100 would be realized here per acre, by planting the Concord for the St. Louis market.

The Catawba will give a medium crop, about 200 to 250 gallons per acre, this season. It will soon be supplanted by better varieties, and in ten years from now, I hope to see but very little of it left. It is evidently not suited to the climate, and though it will always pay the diligent cultivator for his labor, yet there are many varieties superior to it here.

Peaches are scarce here this season, pears also, owing to the late Spring frosts, but apples are, as usual, abundant. We have several new grapes, peaches and apples here, of great promise, of which I hope to send you samples as soon as ripe.

But now, I am afraid, I have exhausted the patience of you and your readers, and you will doubtless be glad if I stop this rambling talk.

THE BEST EARLY APPLE.

BY E. E. CLARKE, NEW HAVEN, CONN.

The specimens of apples herewith sent, are a variety of early fruit that I do not find described in the books. It has been somewhat disseminated about this State within the last few years, from the town of Bristol, it being the leading early apple cultivated in that locality, and I find on inquiry and in an interesting conversation with Mr. Ezra Norton of that town, an elderly gentleman of more than eighty years, that he procured scions of this apple from the northern part of New Jersey, the town of Paramus, fifty-five years ago. He shows on his place large trees that he has grafted at that time, which was probably the introduction of it into this State.

The name he received it under was "Sour Harvest," or "Zour Bough," of the Dutch or Hollanders, the people he received it from.

It being a distinct variety from the Early Harvest or any of the early apples described in the books, it was named by the person following the business of grafting at Bristol, the "North American Best," by which name it is generally known in this State.

An early apple of so much value should be more generally and acurately known. It is of peculiar growth; in the nursery rows it is strong and stiff, very diverging in its leading and other branches, requires very thorough pruning to get it into an upright and perpendicular form. It probably commences bearing sooner and more regular than any other variety; it is large, fair, flattish conical, skin smooth, light or greenish yellow, red blush in the sun, slightly sub-acid, high flavor, very tender and juicy, fine for dessert or cooking; in short I should say it blended the qualities of the Early Harvest and Large Early Bough in equal proportions. It commences ripening the first of August, and continues through the month.

The apple described as the "Primate" in Downing's late edition, is the nearest description of this fruit, but the time of ripening there given is one month later than this.

[Our correspondent has given the character of a *very good* apple with great accuracy.—ED.]

FORM OF VARIOUS TREES.—In ascertaining the habits of growth of various trees of the several popular varieties of apples that are largely cultivating in the neighborhood of Cincinnati, we have taken our own experience as a starting point, and then added to this such additional information as we have been able to obtain from other members of this Society. The result of our labors is the following classification:—*Of an Upright Conical Growth*—Benoni, Early Strawberry, Golden Russet, Early Sweet Bough, Lady Apple, Prior's Red, Northern Spy, Talman's Sweeting. *Upright Growth, but with a Round Head*—Red Astrachan, White Pippin, Alexander Kaighn's Spitzenberg, Michael Henry Pippin, Drop D'or Bohanan, Belmont, Rawle's Janette, Fall Wine, Rambo, Rome Beauty, Summer Rose, High Top Sweet, Myer's Nonpariel, Fall Pippin and Porter. *Spreading Limbs, and Round Head*—Smith's Cider, Maiden Blush, Baldwin, Roxbury Russet, Newton Pippin, Tulehocken, Winesap, Broadwell's Sweet, Gravenstein, Jersey Sweeting, Hubbardstown Nonsuch, Belmont Vandevere. *Drooping, Pendant Form: Head Symmetrical*—Yellow Bellefluer, Pennock, Rhode Island Greening, Newark Pippin, and Fall Pippin. *Pendant Drooping Form: Head Loose or Straggling and Open*—Ortley, White Winter, Pearmain, and Newton Spitzenberg. Of the above, we would particularly refer to Smith's Cider, Yellow Bellefluer, White Pippin, Rome Beauty, and Rawle's Janette, as trees of a marked vigorous growth and healthy, hearty habit. The Benoni, Winesap and Summer Rose are of only moderate growth, but appear perfectly hardy. The Early Sweet Bough, Newton Pippin, and Ortley, (or White Bellefluer,) appear to possess a less vigorous and somewhat unhealthy constitution.—*Selected by a Committee of the Cincinnati Agricultural Society.*

EDITOR'S TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, *Germantown, (Philadelphia,) Pa.* Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY, Vol. XVIII.—The new volume, kindly sent us by B. P. Johnson, Secretary, is a new evidence of the value and importance of this Society; it is filled with valuable knowledge from the brains and pens of men who take delight not only in agriculture, but in imparting to others the lessons of experience. Rarely have we read a volume of more interest. The portions which attract our attention particularly are Dr. Fitch's continued essays on insects injurious to trees, the oaks and their borers being his last topics. Mr. Pell's prize essay on fishes, for which an award of a hundred dollars was made, is just one of those useful and popular essays which tell on the practical public. Our correspondent, Mr. Pardee, last month noticed Mr. Pell's fish-ponds, and to them and the information they teach we propose to devote all the attention our space will now admit of.

It has long been known that fish may be made profitable; oysters have paid large profits to their *planters*, and as population increases, fishes must likewise become a source of wealth, no less than of convenience and health. A man with a good trout pond so arranged that they cannot escape below a milk-house near his premises, has become a person of mark; parties leave New York and Philadelphia very frequently to make a repast on the contents of his superior preserve. But to Mr. Pell's essay, from which we make a few excerpts, wishing that we had space for it almost entire. Mr. Pell speaks as lovingly of his interesting pets as could old Izak Walton. He says: "I have eight ponds on my farm, all artificial, and fed by springs: they are with two exceptions fourteen feet deep, and contain forty-five varieties of fresh and salt water fish." He then proceeds to describe them in succession, beginning with the trout, of which—"The female is the best for the table. She may be known by her small head and deep body. Fish is always in season when their heads are so small as to be disproportioned to the size of their body. The trout is less oily and rich than the salmon; the female is much brighter and more beautiful than the male. This is a singular fact, and I believe the only creature, except woman, that is more beautiful than the male, in all creation. When first I stocked my trout-pond, I placed 1500 in it, and was accustomed to feed them with angle worms, rose bugs, crickets, grasshoppers, &c., which they attacked with great voracity, to the amusement of those looking on. Trout and salmon will bite more readily upon a hook baited with their own roe than upon any other bait. They grow much more rapidly in ponds than in their native streams, from the fact that they are better fed and not compelled to exercise. These are the only fish known to me that possess a voice, which is perceived by pressing them, when they emit a murmuring sound, and tremble all over. * * The largest ever known in England

weighed nearly twenty-three pounds. * * If it is the intention of the angler to send them to a distance, bleed them at the tail, and pack them in a basket with dry straw; when boiled, salt must be placed in the water."

Of carp he says: "There is no reason why they may not be made profitable. Fish are like hens in one respect; they never deposit all their spawn at one time, but at several periods, weeks often intervening, according to its maturity. * * Carp live longer out of their native water than any other known fish. In Holland they are kept alive twenty-two days, hung up in a cool cellar in a bag of wet moss, where they are perfectly fattened on bread and milk. * * As the North River now abounds with them, I will here mention how they may be induced to bite. Having been taught to eat bread, it is only necessary to convert it into paste and dip it in honey. With a hook so baited you may take them readily early in the morning or the dusk of the evening."

Of gold-fish, the Golden Chap, the following remark will be new to many: "I have noticed that by a proper diet I can increase the intensity of their color, change their external characteristics, improve the rotundity of their form, and add much to their size; and what is more surprising than all, those characters become hereditary in their offspring."

The sun-fish; he asserts that "their muscles are quite firm and free from oil, which renders them valuable for food, and particularly calculated for sick persons." The following compliment to fishermen is probably deserved: "Those who are fond of fishing, I have noticed, are generally placid, thoughtful, and particularly given to contemplate nature." * * "In China, almost every establishment has its fish-pond, in which are placed as many store-fish as it can hold; they are fed three times each day, with as much rice and blood as they will eat clean. By this management they advance rapidly in growth, and become exceedingly fat, and if intended for market are carried alive in large tubs of water. The water is then drawn from the ponds for irrigating purposes, and the mud saved for top-dressing. They are then filled and stocked as before. Last year I drew off the water from a sun-fish pond, and removed therefrom 7000 loads of unsurpassed manure, intrinsically worth one dollar per load."

But the pike stories are the most exciting. He says: "I have a large pond devoted to this fish, in which they abound to so great an extent, that I might supply half a dozen families the year round from it. They are the most notoriously voracious fish in our fresh-water ponds, and will devour ducks, geese, rats, serpents, and frogs; they have an amazing number of teeth, which they use in a scientific manner; there are 700 on the tongue, as well as both jaws and roof of the mouth. These ferocious fish have become with me as docile as dogs. * * I have known a pike to swallow partially a fish too large for his throat, and to carry it thus in his mouth, until the portion swallowed was digested. * * Pike are particularly fond of frogs as food, but the frog always makes battle when the pike approaches, and will sometimes mount upon his head, where they become very troublesome customers, placing their foreclaws in the corner of his eye, and clinging with their hind legs. If this position is well taken, it is utterly impossible for the pike to disencumber himself until the frog is willing to depart, which he usually consents to do when the fish approaches near enough to the shore to permit him to leap upon it. Pike grow faster than other fish in my ponds, making eight inches the first year, ten the second, fourteen the third, and twenty the fourth. I am convinced that an acre of pond would yield more profit than a ten acre lot under ordinary cultivation. * * A large pike was once caught in the river Ouse, which weighed twenty-eight pounds. * * I would recommend those eating pike not to swallow the bones, as they are excessively sharp, particularly hard, and defy the gastric juice of the stomach to dissolve them."

The following hint to bass-fishers should be remembered. "The day before you intend to fish for bass, sink a glass bottle in the vicinity of their haunts, with small fish in it, covered with a piece of pierced parchment, or linen cloth; this will attract them in large numbers, and by dropping your line in its vicinity, baited with similar small fish, you may take many of them."

We could go on multiplying extracts, but must be content with the foregoing for the present, heartily commending the book, and this essay in particular.

LIEBIG'S LETTERS ON MODERN AGRICULTURE are to be published immediately by John Wiley, of New York. Dr. Blyth's translation is an excellent one, and the book deserves and will excite the attention of thinking men in all countries. Some of his positions will no doubt meet with objections. They are addressed not to agriculturists alone, but to all who take an interest in their country. From the efforts of the army of anxious laborers results in producing larger crops have been obtained, but Liebig fears that the over stimulation given to the ground may be attended with disastrous results to posterity. The mineral food of plants is shown to exist in the soil in two different states, in one being immediately available, while in the other it is not yet brought by decomposition into a condition for absorption by the roots. "In every case the produce of a field and the duration of its fertility bear a fixed relation to the sum of the available food in the soil. Hence, if by mechanical means applied to the soil, we render the absorption of this food by plants more rapid, we thereby increase the amount of produce in a given time, and thus more quickly exhaust the stock. At the end of this given time the field will, for agricultural purposes, be unproductive, if the mineral matters removed by the crops be not restored." We have already seen this result in America. The author directs attention to the fact that this fundamental principle has been lost sight of in some of the systems of modern high farming, where the assumption is made that the available mineral food in arable soils is inexhaustible. On this system the present occupiers of the land may rejoice in their abundant crops, but the inevitable result will be the exhaustion of the soil for future tillers.

"To question," he says, "the fact of the restoration of fertility to land by guano, bone-dust, or rape-dust, would be an act of great folly, for this fact is borne out by the experience of the practical man." He is quite satisfied with the belief that his system of cultivation has been shown to rest on a rational and systematic basis; "which in reality is not the case." He holds that the greatest importance is to be attached to unwearied efforts in directing attention to the facts on which scientific principles rest: for if we can but succeed in inducing them to reflect on the proof of these principles, practitioners may be considered as converts to the doctrines of science; without a knowledge of principles no science can exist. If the large crops are a consequence of a mode of management by which the ground must gradually lose the conditions of its fertility, by which it must be impoverished or exhausted, then such a system is *not rational*, though it enriches the individual who obtains these high returns. He thinks it no longer possible to bestow again upon the soil all those conditions of fertility which have been withdrawn by the existing mode of husbandry abroad, but, by a judicious system of management, he believes so much may be accomplished with the still existing means, as to put in the shade all that has hitherto been done. He then recalls to mind the most general conditions of the life of plants. To understand correctly the effect of the soil and its constituents on vegetation, we must keep steadily in view the fact, that the elements of food present in it always possess within themselves active powers, but they are not always in a condition to exert this power. A solution of guano, when used in quantity, removes the *whole* of the ammonia, potash, and phosphoric acid which they contain, while not a trace of these substances can be found in the water which naturally flows from the soil. Hence our applications of stimulants, unless guided by science, will soon, if continued ignorantly, leave posterity, it may be with plenty of gold, but no food to be purchased by it.

This book requires *study;* we recommend it to those who would penetrate beyond the surface of things.

PHLOXES.—The following list of phloxes was made from the very extensive variety at Ellwanger & Barry's Nurseries, as the best twelve yet known to American gardeners. This superb herbaceous plants are better worth a place as ornaments than almost any other; they are showy for a long time, and for variety are equal to verbenas, with the advantage of being hardy:

Alba perfecta, Elise Fontaine, Gloire de Puteaux, Henri de Santa Cruz, Madame de Arguilliere, Venus, Spencerii, Superba, Teutonia, Vicomte Albert de Beaumont, Argus, Delecta.

THE ROOT.—Vegetable physiologists are now turning their attention to the great cause of the evils that plants are heirs to, and which has been so long neglected. The microscope is revealing the actual condition of the root, and explaining its mode of growth. Dr. Lindley, in a late *Gardener's Chronicle*, says:

"It has long been known that in certain plants the end of the roots is covered by a kind of cap or hood, within which the process of growth is carried on. Of this the common Duckweed offers a familiar example, which any one may see with the aid of a pocket lens. Another, on a far larger scale, is to be found at the end of the stout aerial roots of the Screw Pine (*Padanus*), in which it looks like a great brown cup. It now appears that the structure in question is general, not exceptional. Mr. Henfrey finds that 'the growing point of a root is not at its absolute extremity, which is covered by a cap-shaped or hood-like portion of epidermis of its own, continuous likewise behind with the cambial structure. This cap-like sheath of the point of the root may be compared with the head of an arrrow, forming a firm body, which can be pushed forward by the growing force behind, to penetrate through the resisting soil. This cap is subject to destruction and decomposition by external agencies, and is less distinctly seen in roots growing in earth than those of aquatic plants. In all cases it is constantly undergoing renewal by cell-development at the back-part; and when it remains undissolved, as in many water-plants, it becomes very large; when it undergoes decomposition in proportion as it is renewed behind, it presents an irregular, ragged appearance, which probably gave rise to the idea of a spongy structure at the ends of the rootlets.'"

The ends of roots undergo a process of exfoliation, the rapidity of which depends on the idiosyncracy of the species, and the temperature and moisture to which they are exposed. This exfoliation is connected with the formation of new tissue in the viscous matter, beneath skins or hoods of epidermis, which are eventually thrown off, and the doctor proceeds thus to point out the practical value of this apparently small fact:

"That rootlets form a skin at their points beneath which the process of growth is carried on may be an anatomical fact, but what is its application? Of what consequence can it be to a gardener to know what a microscope and a microscope only can reveal? We answer by asking whether the invisible processes of digestion in the human stomach need not be understood because they cannot be seen? or whether it is perfectly indifferent to a gardener to know where the equivalent of a stomach is to be found in the plants he grows because it is impossible for him to view either the processes of assimulation themselves or the minute places in which they go on? Surely it must be admitted that if we are to understand the mode of treating plants properly we cannot learn too much about their ways of life and growth.

"It is well known that the roots of plants increase in length solely by the continual addition of new matter to their points. Were it otherwise they would be bent and turned and distorted by the resistance of the soil itself, if indeed they could ever penetrate it at all. This will be easily seen by any one who endeavors to force a piece of twine through the loosest and softest earth that can be found. Hence the well understood fact that the youngest part of a rootlet is its tip, a part which is incessantly renewed during the period of growth; and which, acting like a sponge in absorbing whatever the earth can give up, had acquired at one time the name of spongiole, spongelet, or little sponge. But there always remained these questions: how does the soft young delicate nascent tissue of the rootlet manage to exist in contact with the earthy particles that it is perpetually displacing? and why does it never catch up such particles and entangle them in its substance? To this an answer is now returned; it is not, it is never, in absolute contact with the earth, but is screened from the earliest moment of its second life by an old skin, which it pushes forward, and gradually renews, forming its own matter of growth in security beneath it. Mr. Henfrey compares the skin to the *head of an arrow*, which can be pushed forward by the growing force behind. We would rather compare it to a screen or mantlet such as troops sometimes employ in their advance towards an enemy.

"We may safely assume that this cap, hood, coif, screen, or whatever else it is called, is necessary to the root, and that its removal must be injurious, inasmuch as the forward growth of the root will be prevented by its removal. That being so, of what immense importance it must be to secure, with the utmost care, this delicate organization on the safety of which so much depends. In the rude hands of ignorant persons, who transplant a bush by pulling it up, as if they were 'pulling a turnip,' all this important structure must necessarily be destroyed. It is no wonder then if so many plants perish under the hands of common laborers. Only see how

they 'prick out' cabbage plants or celery, or any of the seedling tap-rooted crops; it is no wonder if they find great gaps in their rows. Instead of wreaking their anger on 'the grub' they should blame their own ungentle ways.

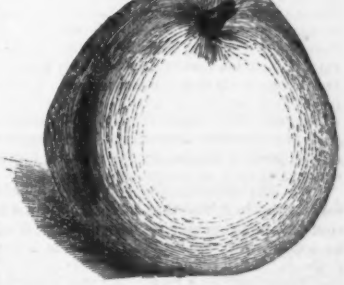
"But it may be said that plants are dealt with well enough in the rude mode that is so common, and that the care required by theory is not really demanded by practice. Winter-moved shrubs, or those which bear to be lifted in August without much care, may be pointed to in support of this notion. But these instances do not really affect the question. In the dry weather of August such plants as the Rhododendron and its allies are not growing; their roots are ripened, hard, and tough to the points of the fibres; and they will bear much rough usage without damage; moreover, a large part of their most delicate fibres is so firmly imbedded in earth that they come up with a 'ball,' and are not at all disturbed. So in winter, when trees are removed, the rootlets are hard and torpid. Nor is it to be forgotten that some plants have a wonderful power of repairing injury, if they have once acquired their woody organization, and time is given them. When the roots of a winter-moved tree are broken the wounded ends may close up, and on the sides of the roots new rootlets with the requisite hood will gradually form before the period of vernal growth recurs. Others are constitutionally able to reproduce roots at all seasons, and under all circumstances, owing to what is called their strong vitality: as we see in the Willow, whose wands grow when stuck in the earth, although they neither have nor ever had a root.

"It is not to cases such as these that rational gardeners will look. We once knew a man who ate Belladonna berries with impunity; that was his constitutional peculiarity; his stomach was able to resist that dangerous poison; but we cannot infer from such a case that Belladonna berries may be eaten. So with the roots of plants; we are not justified in saying that the utmost care is not required to preserve their young points from injury because some plants succeed perfectly well without care.

"But it is not merely on account of the extreme delicacy and importance of their points that roots require to be handled with the utmost gentleness. Another microscopical fact has been ascertained within the last few years, and is of hardly less interest. When you look with the naked eye at the skin of a young root-fibre, nothing is seen except an apparently level, uninterrupted surface. But in many cases there are present infinite multitudes of little hairs, through which food is imbibed; they are the mouths of the root. Through their agency the sucking or feeding power of the rootskin is very considerably augmented; to remove them is to diminish or destroy that power. But they are so delicate that any ungentle treatment of the root must destroy them. In the words of Prof. Henfrey, 'they are mostly invisible to the naked eye, and their presence is chiefly betrayed by the adhesion of the soil to them. When young roots are carefully washed and placed under a magnifying glass, their fibrils (root-hairs) are seen very clearly; and on such roots as those of barley, for instance, they exist in enormous numbers.'

"We recommend all unsuccessful cultivators to turn these important facts over in their minds, and to consider well whether they have always thought about them. They have a very large application."

ERHARD'S RAVENSWOOD PEAR.—We present a cut of this early and excellent fruit produced on the place of Charles F. Erhard, Ravenswood, Long Island, N. Y., who has it now for sale. The cut represents the fruit rather below the average; though small it is lively and excellent; as will be seen by the following report of the "Proceedings of the American Pomological Society," for 1858, page 196, it has been favorably noticed in a paper there read by Mr. T. W. Field. Mr. Erhard now attaches his name to the fruit and calls it "Erhard's Ravenswood," to which name he is fully entitled.



"The Ravenswood, obtuse pyramidal, tending to obovate, small to medium in size, with a very short thick stem, has qualities that entitle it to much regard. Ripening from the middle of July to the middle of August; it is superior to most pears of that period, in rich aromatic flavor, and in its great abundance of vinous carbonated juice. It is a very great bearer, and almost

all the fruits are equally good. It is a seedling found in the woods of Astoria and planted on the grounds of Charles T. Erhard."

A Real Blanket Sheet is the great Poster of the New York Agricultural Society's Fair, to be held on 4th, 5th, and 6th of October. It represents, too, a large and excellent society—shall we say the most progressive? Large enough to be a cradle cover for four twins, we have found some difficulty in placing it "in a conspicuous place," but at last, with a long ladder, and some long nails, it greets every passenger of a not insignificant Railroad. Good luck for the scheme, and fine weather, is our benison. Of the *National Agricultural Society*, at Chicago, and the *Fair at Elizabethtown, New Jersey*, we have most flattering accounts of success in all respects.

The *New Hampshire* State Agricultural Society will hold its tenth Annual Fair at Dover, on the 5th, 6th, and 7th of this month.

WE are quite sure that the following, which we take from that excellent periodical the *Southern Cultivator*, is from the pen of the author of "What's in a Name," which has had so many admirers; in short, it can only be from T., of Torchhill, Georgia, who is termed the Tom Hood of Southern pomology, by the *Cultivator*.

YE LITTLE TREE.

BY YE ORCHARD RAMBLER.

TAKE it up tenderly,
Plant it with care;
It's but a little tree,
Nothing to spare!
Scant are the limbs on't,
Fibres but few,
Take care, or *it* won't
Take care of *you*!

Mangle the bark of it,
Man with a soul!
Pestle the roots of it
Into a hole!
Oh, for the shame of it,
Better be dead,
Fruit to the name of it!
Nary a Red!

Take it up tenderly,
Man with a soul!
Oh! but a little tree
Likes a *big* hole!

Fair is the sight of it,
Lordly and bold!
Fruit on the limbs of it,
Crimson and gold!

Who'd be a market-man
Selling his fruit,
Gum in his eye, and
A worm at his root?
Down with the raw-bone,
Shrivelled and dry!
Juice for my jaw-bone!
Joy for my eye!

Basket on basketful,
Peach upon Peach!
Juno-like, beautiful!
Rosy and rich!
Choose for the good of you,
Orchardists, each!
Dollar *a load*, of you,
Dollar a PEACH.

THE HARTFORD PROLIFIC grape was fully ripened by Col. D. S. Dewey, at Hartford, Conn., on the 3d of September. It seems to be an increasing favorite. Will some one exhibit in our vicinity a bunch of Union Village, which we have not yet seen in perfection.

FRUIT IN THE SOUTH.—"We had," says a correspondent in southern Georgia, "a fine crop of grapes this year; also, pears; apples, a small one. Stone fruits were cut off by frost, and what escaped that the curculio took. One fine peach orchard was saved from frost by dense damp smoke; to effect this, wet sawdust and tan bark proved best. Speaking of curculio, all the best late plans, except the old safe ones of shaking, and of pigs and chickens, are useless. Relying on smell will not do.

THE FRUIT IN ROCHESTER.—A hurried letter appears in our "correspondence" which might have been greatly extended, and would properly have described other useful establishments, but time was wanting for examination, and we took the most extensive. With regard to the absence of fruit in so many other sections of our country, the old adage occurs to the memory, that "the vestry eat the venison and treat the congregation to a chime of bells!" While our model nurserymen are enjoying the fruits of their labors, and have plenty of apples, pears, and plums, the majority of our parish are starving on potatoes—the nurserymen have the venison, and the congregation the chime of bells only. Let us all wake up—"follow the leader"—stir the ground, shake off the curculio and the slumber that pervades so many, and resolve to have the venison in spite of that incumbrance which wraps so many in the cloak of indifference, and why not say at once, *laziness*.

ANSWERS TO CORRESPONDENTS.

FRANK SNOW, Fredonia. The seeds of the "new lawn grass" have been started by one or two in this country, but must be procured, as yet, from London. See our last number.

E. B, West Bridgewater.—We are not aware whether the pawpaw will succeed in West Bridgewater or Boston. Possibly it may, but it is doubtful. There is no difficulty in making the seed germinate. All the names you mention are for the same plant. Anona is the name in Michaux. *Of Gishurst's compound*, so much talked of and approved by the gardeners abroad, for the destruction of insects, we have no practical information. Will some one import the article and enlighten us.

S. S.—We find the following answer to your inquiry all ready in the *Cottage Gardener*:

"LARGE HYDRANGEAS IN SMALL POTS.—The way they get those enormous large heads of Hydrangeas in 48-pots is this: They have strong old plants to get cuttings from; and in September, or later, or earlier, when they can feel the top of a shoot is set for bloom another year, they instantly cut it off with three joints, put it in a 60-pot, plunge it in a warm bed, and root it quickly without forcing the flower-bud any farther. Early in the spring they shift into the next largest size pot, and humor the plant so as to enable it to make the bloom as large as it would be if the shoot had never been cut off. Your plants struck in the spring will make a bed next summer; but ten thousand of them would not furnish one bloom such as you want.

SOME feeling is expressed by one or two of our correspondents, that an error has been committed in sending out a wrong grape and a very inferior one, for the *Emily*. Where the mistake began we shall probably be able to ferret out.

DEAR SIR:—You would confer a favor on me, and perhaps many others of your readers, by an article on the "Doucin stock." "Doucin stock" are advertised in all the nursery-pamphlets and at a high price. I have the last edition of Downing, and several other horticultural works, from none of which can I gain any information as to the nature or advantages of the Doucin stock. What are the nature, habits, and advantages of that stock; and are they sufficiently well known and established to justify me in planting, this fall, an orchard of two hundred trees upon that stock? Respectfully, A. B. C.

[The Doucin or Doucain stocks, as they are interchangeably called, are the layered branches of a variety of the "Pyrus Malus."

As to the "nature, habits, and advantages of that stock," the tree is a distinct species of apple, is of medium size, bears small sweet fruit, and reproduces itself from seed: but for ordinary nursery purposes, as we have before said, the layered branches are used as making the best stocks. These stocks and the Paradise stocks have been used both in France, England, and this country, for dwarfing the apple-tree, and thus bringing numerous sorts within the sphere of a moderate sized garden. The Paradise is used more for producing a bushy-headed dwarf tree, and for bearing a fruit which is higher colored and earlier; while the Doucin is for

raising a pyramid or dwarf standard by more careful training. Lindley says in his "Theory and Practice of Horticulture," p. 354: "In some soils, Doucin stock would not succeed for apples," and speaks of the apple on Doucin stock as requiring a loamy or moderately light, *but not chalky*, soil.

The apple scion engrafted upon the Doucin is changed in no other respect, either as regards habit of growth, flower, fruit, or quantity produced upon a branch of a given size, except that the tree will bear quicker, is most emphatically dwarfed, and its products are of course limited in number by this diminution in size; while by being trained into the pyramidal form, it can be made quite ornamental; and the garden, not being overshadowed by the branches of huge standards, can be allowed to produce other fruits; and vegetables and flowers can be cultivated to advantage.

If you are confined to an area of one-tenth of an acre, and wish to have 100 or 200 samples or varieties, and those as fine and fair as possible within that space, we can decidedly recommend the dwarf or pyramid trees. If you wish the orchard for ornament, there is no finer show than to see such miniature trees laden with the most perfect and handsome fruit; and again, dwarfs always bear sooner after planting than standards. But if you speak of an orchard merely for quantity of product and for profit, we must suggest that the standard trees, when come into bearing, will produce more fruit per acre, and in the majority of cases of equally fine quality with the dwarfed stock, while the care required in maintaining your orchard in fine condition will be far less than if you have the pruning and care of these pyramids.

Where land is valuable and labor expensive, it is often of consequence to the orchardist to have speedy returns for his money and trouble. In such cases the space between his 200 standard apple-trees, unless devoted to other purposes, can be filled with early and showy sorts upon the Doucin stock, which will commence bearing on the third year after planting; and when the standards come into full bearing these can be transplanted or destroyed. We would only recommend the space above stated to be devoted to quite early and quite showy fruit. These early sorts always become fairer to the eye, smoother, and have less imperfections upon the dwarf than upon the standard stock. The Red Astrachan, although not the earliest, is one of the most showy fruits that can thus be cultivated, and one of these dwarfs covered with this magnificently conspicuous variety, is as gay and gaudy in appearance as the handsomest of flowering shrubs; while in usefulness it is producing a valuable addition to our table luxuries.

A. B. C. says "Doucin stocks are at a high price." In the catalogues which we have noticed they are the same price as four-year-old standards.

CATALOGUES, &C., RECEIVED.—Seventh National Exhibition of the United States Agricultural Society, to be held in Chicago Sept. 12th to 17th, 1859; with the huge and wonderful poster, showing that something valuable is to be accomplished; this poster would make a comfortable blanket!

Wholesale Catalogue of the Du Page County Nurseries, Naperville, Ill., Lewis Ellsworth & Co., Proprietors.

Descriptive Catalogue of Dahlias, Verbenas, Fuchsias, etc., etc., for sale by Thorp, Smith & Hanchett, at the Syracuse Nurseries, New York.

Descriptive Catalogue of Fruits, for sale by Thorp, Smith & Hanchett, Syracuse, N. Y. These are very full catalogues, and discriminating in their character.

Feast's Fillmore Strawberry Circular; with an engraved portrait of the fruit and vine. S. Feast & Sons, Baltimore, Md.

Wholesale Catalogue of hardy ornamental trees, at the Great Valley Nurseries, New York, by S. T. Kelsey & Co.

Twenty-First Annual Report of the American Institute, 1859, at the Palace Garden, New York; will be opened October 28, 1859. Premiums offered, $1,600.

Annual Catalogue of the Gloaming Nursery, 1859 and 1860. Jarvis, Van Buren & Co.,

Clarksville, Georgia. A collection of southern seedling fruits will here be found, beyond competition as to numbers and excellence.

Choice collection of New Roses. Thomas G. Ward, Washington, D. C., being the kinds raised by Prof. Charles G. Page.

Descriptive Catalogue of Grape-Vines, Strawberry Plants, and Small Fruit, for sale by Samuel Miller, Calmdale, Lebanon, Lebanon Co., Penn. Grapes are now the subject of great interest in horticulture, and much attention is being paid to all kinds. Mr. Miller has fruited one hundred varieties, and has given great attention to their qualities; has gone heart and hand with the business, and may be relied on for filling orders satisfactorily. We should not go wrong in recommending planters to get his catalogue and take his advice what sorts to grow.

Patent Office Report for 1858, a work of which we shall have something to say.

Letters on Modern Agriculture. By Baron Von Liebig. Edited by John Blyth, M. D. London, 1859.

A Manual of Scientific and Practical Agriculture, for the School and the Farm. By J. L. Campbell, A. M. Illustrated. Philadelphia, 1859.

Country Life: A hand-book of Agriculture, Horticulture, and Landscape Gardening. By R. Morris Copeland. Boston, 1859. A very handsome book which we have not found time thoroughly to read.

Descriptive Catalogue of Fruit, Ornamental Trees, Shrubs, Roses, &c., at the Hermann Nurseries, Missouri; Husman & Manwaring, Proprietors. A very good catalogue of valuable stock, including a great variety of grapes.

Wholesale Catalogue of Parsons & Co., Flushing, near New York, for the autumn of 1859.

Choice collection of new Roses. Thos. G. Ward, Washington, D. C.

Trade List of Roses. James Pentland, Greenmount Nurseries, Baltimore, Md.

Descriptive Annual Catalogue of Bulbs and Flowering Roots, offered by J. M. Thorburn & Co., 15 John St., New York. A capital list. Henry A. Dreery, Philadelphia, ditto.

Fruit and Ornamental Trees, &c., for sale at the Leavenworth Nursery. Howsley and Burr.

Lyons Nursery, 1859. E. Ware Sylvester, Lyons, Wayne county, N. Y.

Transon, Forteau & Sons' Nurseries, Orleans, France. Trade list for 1859, '60. Plants as cheap as parsnips.

Wilson Agricultural Society's First Annual Exhibition, Oct. 12, 1859; but there is nothing but the printer's residence, Lockport, N. Y., to designate where Wilson is located.

Catalogue of Fruit and Ornamental Trees, for sale at the Hopewell Nurseries, near Fredericksburg, Va., Henry R. Roby, Proprietor. A very extensive assortment which we know there *ought to be* a demand for in some parts of Virginia.

Ellwanger & Barry's Descriptive Catalogue of Fruits, Rochester, N. Y. This should be read by every planter as well as the following:

Ellwanger & Barry's Descriptive Catalogue of Ornamental Trees and Shrubs, Roses, Flowering Plants, &c., &c., &c.

Ellwanger & Barry's Catalogue of Dahlias, Verbenas, Fuchsias, Geraniums, Chrysanthemums, Phloxes, and other select Greenhouse, Hothouse, and Bedding-out Plants. Rochester, N. Y.

Mount Hope Nurseries, Rochester, N. Y. Ellwanger & Barry's Wholesale Catalogue, or Trade List of Fruit and Ornamental Trees, Shrubs, Roses, &c., &c., 1859 and 1860.

Catalogue of Fruit and Ornamental Trees, cultivated and for sale by Peters, Harden & Co., Atlanta, Georgia. A good descriptive list of a good stock.

Descriptive List of Fruit and Ornamental Trees, &c., &c.. cultivated and for sale by P. J. Berckmans & Co., Augusta, Geo. We congratulate our Georgia friends upon having such nurseries as the above. Messrs. Berckmans also issue a supplemental catalogue for 1 859-60.

Descriptive Catalogue of Select Fruit Trees at the Nurseries of Thomas & Herendeen, Macedon, and Union Springs, N. Y.

Gossip.

THE TEA PLANT.—The agricultural department of the Patent Office will have one hundred thousand vigorous tea plants ready for gratuitous distribution within three or four months. It is expected that American grown tea will enter the market within five years.

PICEA NOBILIS.—This, which is still the most beautiful of all the California firs, has for many years past been much admired and sought after by lovers of Conifers. From the small number of seedlings raised when it was first introduced to this country by the lamented Douglas, good trees are scarce, and only in the hands of a few growers. Since its first introduction to Europe until very lately no good seeds have been imported, and notwithstanding the many plants which have been raised from cuttings or grafts, yet, from the barbarous custom of growing them in pots, good plants are still very expensive and difficult to be met with.

"THE Bois de Boulogne and the Bois Catalan were never," says a Paris correspondent, "in such request. Every night, betwixt seven and eight o'clock, carriages by hundreds may be seen rolling down the avenue de l'Imperatrice towards that fairy land, and there they remain till after midnight, recreating in the autumnal breeze as it sweeps pleasantly over the glassy surface of the broad lake. It is impossible to imagine a more perfect illustration of the "Happy Valley" of Rasselas than this exquisite combination of grassy lawn, of woodland, forest and magnificent sheets of water, with its rushing cascades, now presents. At night the boat-houses and the various gondolas are lit up with globe lamps of many colors, the reflection of which strikes into the depths of the lake and presents the aspect of ranges of fiery columns, as of a subaqueous palace, while the shadows of the tall trees interposing suggest the idea of a shrubbery and forest springing up from below. The lamps of the different vehicles as they flit by seem to dance backwards and forwards into the depths of the lake, till, following up the delusion, the visitor might portray to his mind's eye a temple of fire crowded with torch-bearing adorers, the vividness of whose flame bade defiance to the powers of water."

THE evil of deep sowing is not confined to the open garden. One cause why seedsmen get such bad names, when seeds would not grow, is owing to too deep covering, or placing them in soil so waterlogged, that, though they swell, the air cannot get at them, and decomposition is the result. Another cause why seeds saved by amateurs sometimes refuse to vegetate, is, that after cleaning they often are left in a place thinly spread out, and exposed to the full force of an autumn sun. The carbon, or starchy matter, becomes so fixed, or indurated, that it will not change into a sweet sugary substance for the nourishment of the embryo. Fine kinds of cucumber seeds are much injured by full exposure to sun for months, or weeks, on the open shelf of a hothouse. A few days would have done them no harm.

Miscellanea.

THE PIKE.—The pike is one of the largest of fresh-water fishes, and indeed, if the accounts which some writers give are not exaggerated, it occasionally attains a size not greatly inferior to the gigantic inhabitants of the ocean. Individuals are recorded as measuring from five to nine feet in length. They frequently weigh above 30 lbs. in the lakes of the north of England; Dr. Grierson mentions one taken in Loch Ken, in Galloway, which weighed 61 lbs. Pallas states that the lakes in the government of Tobolsk, in Siberia, nourish multitudes of pikes which attain the size of between 30 and 40 lbs. In North America, which seems to be the

head-quarters of the family, since not only the common European species, but several others exist in the great lakes of that country, 30 lbs. is considered a large size, though doubtless some individuals attain a greater weight. Most authors have cited the accounts of one said to have been caught at Kaiserlautern, near Mannheim, in 1497, which was nearly 19 feet in length, and weighed 350 lbs. The skeleton of this extraordinary specimen was for a long time preserved, and bore a brass ring with an inscription to the effect that the fish was put into a pond by the hands of the Emperor Frederick II., the 5th of October, 1262. From this it is inferred that it was upwards of 235 years old.—*From the Encyclopædia Britannica—New Edition.*

THE British Agricultural Society have just published a prize essay on the potato-disease, from which we quote a passage for the notice of those whom it may concern. The author, Dr. Lang, says "the disease is of a fungoid nature, increased in virulency by atmospheric causes. That all manures are injurious, saving only lime and salt. That the earliest potatoes in ripening should be exclusively grown. That earthing up repeatedly with fine earth is the only effectual preventive to the ravages of the disease."

Correspondence.

Rochester, New York.

DEAR HORTICULTURIST:—The lovers of your pages during years that are past and gone, may not object to reading a few hasty lines from this, your old residence, and now most certainly containing some of the best examples of horticultural progress. Consider me then shaking off the dust of Broadway on board the New World, that Great Eastern of the rivers, and dining next day in Albany, knocked about first on one side and then on the other elbow by ladies waiting on table in extra large crinolines; evidences that women are *asserting* their rights in these progressive quarters. Thence follow to the garden nurseries of the wealthy city of Rochester, and into the grounds of Ellwanger & Barry, the latter the able conductor of your historical pages for so considerable a portion of your lengthening history.

A fanciful writer says: "Of some plants the seeds, as far as we can perceive, are living animalcules, with *voluntary* motion, till they pitch their tent upon a spot that they think will suit them; they then germinate, and change from animals to algæ." Now surely the pear seeds would seem to have voluntary motion, and to have pitched upon Rochester for their home, but for the fact that apples and plums have done the same; and to suppose that all the fruits could have *assembled themselves*, is going a little too far. We must believe, therefore, when we see acres of trees, nearly *all loaded* with fruit, that there has been some human ingenuity invoked to call them together. Such is the case; superior culture in a suitable soil and a proper climate has arrayed the trees in a garb such as I never saw before. The pears assume here to my vision the same unaccountable increase of health, beauty, size, and productiveness, with fruit so large as not to be recognized or called by name, as surprised Mr. Barry at the exhibition at Burlington, Iowa, when he fairly admitted even he was at fault. Now in Rochester, the Dutchess and the Bartlett assume an aspect and a color—I may as well call it *the pear bloom*, which is to me from a little farther south,—the greatest of surprises; and this bloom, or a similar tinge, pervades other fruits. The grape and the green gage plum have it in a very marked manner. Then the sizes and the health! Why, no orange-tree in the tropics is more beautiful than the loaded pear-trees of Ellwanger & Barry, and others of Rochester. A soil of the quality that the pear would select for itself, and a climate to suit it also, have made the product all that has been said of it. And yet, without the greatest attention in other orchards

of the same vicinity, while the few pears that adorn the trees are larger than further south, there is also evidence that the utmost culture is required. The accounts we have had are realized in several, but not in all cases; the mode of treatment is precisely what has been often promulgated. To insure success there is no other crop, not even a spear of grass allowed to grow in the vicinity of either pear or plum-tree. Aeration of the root, mulching with stable manure in the fall, good trimming, and fine fruit is the result.

The plums are a perfect sight; the curculio is shaken off into sheets regularly every morning by a person appointed for the purpose; it requires but little time to do this, and the result is magnificent. The Green Gage, Pond's Seedling, Bowman's Magnum Bonum, Peter's Yellow Gage, Damascus Red, and the Pruin plums, here hanging like ropes of onions, are examples of what care and attention will do.

Of the pear, the largest number budded is the Bartlett. The best bearers, where all seemed to be loaded, were probably the Duchesse D'Angouleme, Bartlett, Flemish Beauty, Vicar, Beurré Clairgeau, and Hardy, Belle Lucrative and Virgalieu; and we noted as very fine, Beurré de Waterloo, Goubault, Calabasse monstreuse, Cramoisie, in beauty number one, though in quality second; Pratt, Livingston, Virgalieu, the Downing, named by Leroy; Wharton, new; Buffam, St. Ghislin, Consellier Ramwez, very large; Beurré Nantais, Baron de Mello, Beurré Superfin, very good; Tyson, Beurré D'Amaulis, large and good; Sheldon; and the Church, known and esteemed for twenty years as one of the best.

The apples here are quite as successful as the pears; the trees are breaking down with the weight, and the dwarfs are especially beautiful. We noted as standards, Early Joe, Strawberry, and Jersey Sweeting, as highly ornamental; as fruitful, the Keswick Codling, Mother, Broadwell, Red Astrachan, Baldwin, Gravenstein, Genessee Chief, Rousselet de Stuttgard, and Reine de Reinette. The dwarf apple-trees were also borne down with fruit, and of extreme beauty, the best for ornamental purposes being, perhaps, the Doucain, but all were handsome and nearly all fruitful.

The crab-apples.—One of the most beautiful exhibitions at Ellwanger & Barry's, are the crab-apples on dwarf stocks. No lemon-tree could be more superb. The Large Yellow, of which we shall give a colored drawing, is of surpassing elegance; the Large Red, Yellow Siberian, and Golden Beauty, should be cultivated in every garden; and the little French Lady apple is ornamental and productive. But I must leave this grand exhibition of fruit, declaring it more encouraging than the finest collection ever brought together in a room. Here is the place to study and admire fruit-culture. The great scale on which everything is done, and the almost universal success in each department, is a means of education seen nowhere else in this or any country.

Acres of White Currant bushes scarcely supply the increasing demand for this popular fruit.

Peaches have failed this season in northern New York, and watermelons we remarked are very small, so that there is compensation in everything. The stock of young peach-trees is tempting for orchard-house builders.

Of Grapes, Ellwanger & Barry have a superior stock, and Bissell & Salter, Frost & Co., H. E. Hooker & Co., all, it seemed to us, might supply any reasonable demand in every branch of fruit-culture. Ellwanger & Barry have, say 4000 fine Delaware plants, and so forth; Bissell & Salter, two houses quite full, as well as the other varieties, including Logan, etc., etc., etc. Ellwanger & Barry have also the new varieties recommended for orchard-houses. The mode in which grape-vines are preserved in winter, reminds one of the summer operations of cloth merchants; after the wood is ripened they are piled away on shelves in cellars, and orders can be filled very easily and rapidly. We saw thus, a few thousand Rebecca vines; from this the reader may judge of their stock.

The Roses—A whole prairie of the finest roses, say ten acres, greets the eye as you pass down Ellwanger & Barry's long walks; what will some of your readers say to a stock of three or

four hundred thousand, and the demand annually exceeding the supply! Their Moss roses, Salet, etc, are here in abundance.

Strawberries.—But we have passed the great strawberry department, and can only note the information given, that the proprietors of these nurseries consider the following the best twelve kinds: Wilson, Triomphe de Gand, Trollope's Victoria, McAvoy's Superior, Hooker, Longworth's Prolific, Genessee, Iowa or Washington, Brighton Pine, Triomphe de Gand, Hovey, and Burr's New Pine.

The ornamental stock of trees, shrubs, and herbaceous plants, is extensive and superior; Washingtonia, (Sequoia,) of large size and ready for present effect. I noted as especially desirable, Cupressus Lawsoniana, Weeping Kilmamock Willow, of which much can be made, Abies Cephalonica,—a specimen here is fifteen feet in height;—Pinus pumila,—a specimen ten feet, and forty in circumference; Cunninghamia Sinensis—to be strawed up in winter,—Pinus Rubra, Laurus Californica, Photinia detata,—a new half hardy evergreen,—Juniperus Californica,—the leaves as fragrant as a rose geranium,—a fine lot of Cupressus funebris, Thuja Borealis, Acacia Bessoniana, with rich green foliage, the Cracovien Willow, the beautiful Rosemary-leaved Willow, the Oak-leaved Mountain Ash, the Weigelia amabilis, blooming in the fall, a great quantity; the Robinia inermis, Willow-leaved Ash, the extraordinorily beautiful Weeping Mountain Ash; an acre or two of tree Pæonies; whole hedges of African tamarisk, of Deutzia gracilis—superb for the garden borders, and Mahonias without limit; as a tree the Cut-leaved Birch, and others of that habit, are especially desirable. A specimen of this birch forty feet in height is extremely ornamental.

This visit to Ellwanger & Barry's premises has given me great pleasure. The extent of the operations carried on may be imagined when I say that six men are from year's end to year's end, employed solely in turning and mixing manure; that forty horses are employed in drawing it and in other operations; that to the regular supply of hands three or four hundred are added in the packing season; that their grounds embrace about a thousand acres, much of this in young pears, and that with all this cultivation there is no old stock, the planting seasons carrying it all off. When we reflect that all this is the result of patient industry superintended by knowledge and tact, and that these Napoleons of horticulture are esteemed wherever known, I have said enough to stimulate young men to industrious, steady habits; and I would say to all, *go and do likewise.* My paper is exhausted but not my facts, nor my admiration of these scenes of active usefulness most thoroughly rewarded.

The reflection constantly occurred during my visit, that it would be in vain to select or to describe a business at the same time so fascinating, so agreeable, so valuable to my country.

J. J. S.

MR. EDITOR:—I observe that at a horticultural meeting, at Rochester, a short time since, the use of swamp muck as a mulch for trees, &c., was suggested.

Last winter I caused muck, fresh from the swamp, to be drawn upon ground occupied by pear trees, and by raspberry and blackberry plants. In the spring, the muck having become quite friable, was spread over the surface, forming a mulch of perhaps one half inch in thickness, and proving a complete protection, during the drought which has prevailed here for a few weeks past; while the grounds adjoining seemed to have been entirely dry for several inches below the surface, the grounds thus treated presented such an appearance in no degree whatever.

I propose in the fall, to manure these trees and plants by digging in the mulch, which will then have become completely pulverized, and next winter to begin a renewal of the treatment which I have related; that is, draw on more fresh muck, spread it in the summer for a mulch, dig it under in the fall for manuring. Why would not this treatment be proper for strawberries and all garden vegetables where stimulating manures are not desirable? an occasional dressing of ashes would probably render the muck efficient as manure.

Three years ago I girdled, near its base, a bearing branch of an Isabella grape-vine. The fruit upon this cane ripened some week or ten days in advance of other fruit upon the same vine or upon adjoining vines, and the berries were very considerably larger. Last year I treated another cane upon the same vine in the same manner, and while the same result was not observable in regard to early maturity, the same increase in the size of the fruit was apparent. In neither instance did any observable injury result to the vine.

Yours, &c., F. S. ROOT.

Saratoga Springs, Aug. 24th, 1859.

"DEAR SIR:—Herewith I send you a cluster of the Taylor Grape, a wildling of the Cumberland Mountains. A little below Catawba in size of bunch and berry; free from all disease; a great bearer, and an enormous grower. Hardier than Catawba. This fruit was taken from the vine the 15th of August, on account of the wasps and bees eating them, and were not fully ripe; but you can judge of their quality." The above is a copy of a part of the letter, accompanying the grapes, from a friend in the northern part of Kentucky, who never sold a vine nor never will, but who has kindly distributed it in small parcels, and who kindly sent me the fruit. The vine I have growing, and is quite distinct from any of the one hundred varieties that I have. Yours, truly, SAMUEL MILLER.

Calmdale, Aug. 23d, 1859.

[This may be a very good White Grape, but it was received not quite ripe. There is to be an avalanche still of new fruit of this description, but we say

"Come one, come all,"

for out of the multitude we shall get varieties of the greatest value. We shall have more to say of the Taylor Grape.—ED. H.]

MR. MILLER also sends fine specimens of Delaware, Rebecca, Union Village which we shall figure, but it is not quite ripe for the taste; Delaware Burgundy, an excellent fruit of compact black berries, and will become a favorite; Franklin; the Perkins very foxy; Hartford Prolific, which hangs on to the bunch very well; Concord, Raabe, or Honey, small but very sweet; Mary Ann, about as good as Isabella; Lenoir, from a young vine, not fully ripe, and now pronounced identical with Devereux; Brincklé, of which we have little to commend, and Northern Muscadine, which is foxy and pulpy.

Union Village would pass by its appearance for Black Hamburgh, but the taste undeceives us at once.

HERE is another candidate for popularity, of which we only know personally that it was received in a state of entire decay:

MR. EDITOR:—I send you a bunch of grapes for inspection. The vine was found growing in an old waste garden, some twelve years since, and transplanted where it now stands, and has been bearing regularly ever since. It is thought to be an accidental seedling. It is earlier than Catawba and perfectly hardy, not being injured in the least by the severe winters of 1855–6, while Catawba and Isabella were killed to the ground within eight feet of it. It suckers less than either, and is not so liable to rot; is sweeter, with a thicker skin and less juice. For this climate (and I can suppose north of this) it is a better grape than the former.

I have heard it said that it was a better grape than the Rebecca, Diana, or any of the new natives. This grape has been propagated to a very limited extent. I am very anxious to have the opinion of competent judges of its merits, both for the table and wine, before propagating largely, which I intend to do the next season. Please give your opinion candidly, publicly, or privately, as you may choose. If the grape is worthy, I wish to introduce it to public notice, if not, we will content ourselves by keeping it among us; it is the best we have.

Yours, respectfully, R. S. REEVES.

Keyesburg, Logan co., Ky., Aug. 20th, 1859.

DEAR SIR :—We take the liberty of sending to you a bunch of the German White Muscat.

You see from the name that we do not pretend it to be a pure native.

We were anxious to test the fruiting qualities of the vine, and the flavor and quality of the fruit, and therefore started it in a cold house rather early, and have kept the plant in a tub all summer. This therefore does not prove anything, except as to color and flavor of the fruit. The size, of course, would be much improved upon a stronger plant growing in the open ground.

This is a grape which came to us highly recommended as being perfectly hardy, a great bearer, of fine flavor, and very early. It appears that it was brought to this country from the north of Germany, about ten or twelve years ago: has been growing and fruiting out-of-doors for several years, and proved very satisfactory. The mercury stood 12° below zero last winter and did not injure the vines. Very truly,

BISSELL & SALTER.

Rochester, N. Y., Aug. 17, 1859.

GERMAN WHITE MUSCAT.

GRAPES — DEVEREUX, LENOIR, &C.—*Dear Sir :*— In the *Horticulturist* of November, 1857, were given some descriptions of our native grapes, among which was one of the Devereux. This grape, as first known here, proved the same as the Lenoir. But some very remarkable bunches were sent here to our first fruit exhibition, from Montgomery, Alabama, under this name, totally distinct from ours, and it was taken for granted that at last the true Devereux was obtained; a description was drawn up from this fruit and from vines from the same locality. Since then, Mr. R. Peters, of Atlanta, has obtained cuttings from the original vine received as Devereux from the woods, and on fruiting it turns out to be identical with Lenoir, while the vines from Montgomery prove to be identical with

the Ohio in leaf and fruit. It was bunches of the Ohio of extraordinary size, which were exhibited here.

Mr. Peters and myself are satisfied that there is no distinct Devereux grape.

The Lenoir has been obtained wild in three localities, by the gentleman whose name it bears, in Sumpter district, S. C., by Mr. Devereux in Hancock county of this State, and by the former in Forsyth county, from whom Mr. Thurmond obtained it, and has been grown under the names Lenoir, Devereux, and Thurmond. My seedlings of Lenoir in several instances now appear fac similes of the parent.

With the exception of the Delaware, this proves our earliest grape, and it is a very desirable one from its freedom from rot and the excellence of its fruit. There is no more hardy vine grown.

The Delaware has ripened here this season for the first time, and certainly is a step in advance of any other native. Whether it is earlier than Lenoir I am not quite sure, as the first blossoms of our vines were destroyed by frost, and the secondary buds broke very irregularly. I think it a trifle earlier than Lenoir, and decidedly sweeter. The Lenoir has a more brisk vinous flavor. I prefer both these grapes to Rebecca; no one who once possesses them will be willing to do without either.

A word about ringing the grape-vine. Of two Isabella vines growing upon the same trellis, after the blossoms were well expanded, of the one a ring of bark was removed from a branch containing three bunches. These bunches ripened in July, were of unusually large size as to their berries, and of remarkable sweetness, for the variety, and I am greatly pleased with the result of the experiment. The other vine I intended to take out this fall, as they are getting too crowded on the trellis. Accordingly, I took off a ring from the body of the vine at the same time the operation was performed on the branch of its neighbor. The operation had no beneficial effect whatever. The grapes are no earlier and no larger. Now, is this an ordinary or extraordiny result? Did stopping the downward flow of the entire sap of the vine at that point so weaken or check the growth of the vine at the root and stem below the ring, that the nourishment of the upper part was not really increased, and the beneficial results expected were thus entirely lost. For the future I am disposed to ring so few bunches on each vine that its general growth and vigor will not be affected. I expected the vine would be sacrificed, but did not expect the beneficial effect of the operation to be thus counteracted. Does the experience of any of your readers correspond with mine, or is this an exceptional case?

Yours truly, WM. N. WHITE.

Athens, Georgia, Sept., 1859.

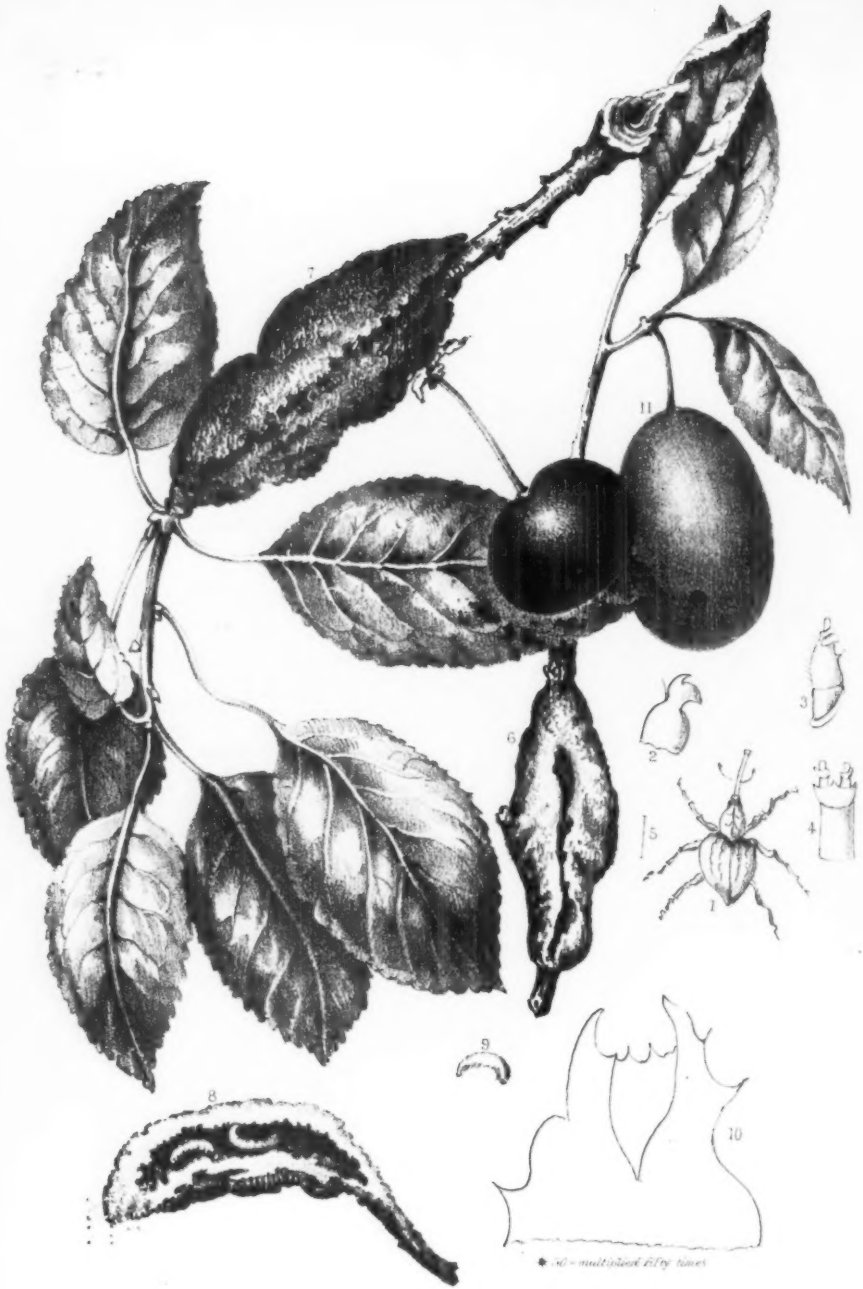
DEAR SIR:—We have taken the liberty to enclose in a small box to you a parcel of grapes. We hope that the Delaware and Logan grapes we send to you may keep up the reputation of the varieties.

These are part of a lot which Mr. Thompson, of Delaware, Ohio, sent to us for distribution: you see that the Logan is rather *passé*, but you see that it is compact, not loose: please tell us if they are as good as the Isabellas. Yours, in haste, BISSELL & SALTER.

[The Logan in the state it was received was not equal to the Isabella. The Delaware, perfectly delicious.—ED. H.]

THE HARTFORD PROLIFIC GRAPE, a correspondent writes us, ripened Aug. 23d in Connecticut, and the 18th of the same month it has in one case attained maturity. Col. Dewey thinks it is rapidly winning public favor, and that its habit of dropping from the bunch is less conspicuous than at first. This opinion is confirmed by the *Homestead*.

DEAR SIR:—Don't laugh at me, but I will tell you a fact. On an Isabella grape-vine there is a bunch which is in close proximity to my lightning rod, and this bunch and this only of several hundreds turned of a deep black on the 20th of August, all the others being perfectly green. What does this teach us of the important uses which may be made of electricity? M. M. C.



* 50 = multiplied fifty times.

No 1. Magnified Rhynchœnus Nenuphar.
2. Mandible.
3. Maxillæ.
4. Mentum.
5. Natural Size.
6. Plum branch with knot.

No 7. Cherry branch with knot.
8. Cherry knot section.
9. Larva natural size.
10. Magnified Mouth of Larva of Rhynchœnus Nenuphar.
11. Cut with the mouth of the egg downward.

For THE HORTICULTURIST,

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